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<170> PatentIn Ver. 2.0

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Ala Gly Pro Pro Pro Pro Pro Gly Phe Lys Ser Glu Phe Thr Gly Pro Gln
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Asn Thr Gly His Gly Ala Thr Ser Gly Phe Gly Ser Ala Phe Thr Gly
65 70 75 80

Gln Gln Gly Tyr Glu Asn Ser Gly Pro Gly Phe Trp Thr Gly Leu Gly
85 90 95

Thr Gly Gly Ile Leu Gly Tyr Leu Phe Gly Ser Asn Arg Ala Ala Thr
100 105 110

Pro Phe Ser Asp Ser Trp Tyr Tyr Pro Ser Tyr Pro Pro Ser Tyr Pro
115 120 125

Gly Thr Trp Asn Arg Ala Tyr Ser Pro Leu His Gly Gly Ser Gly Ser
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Tyr Gly Gly Thr Arg Arg Arg
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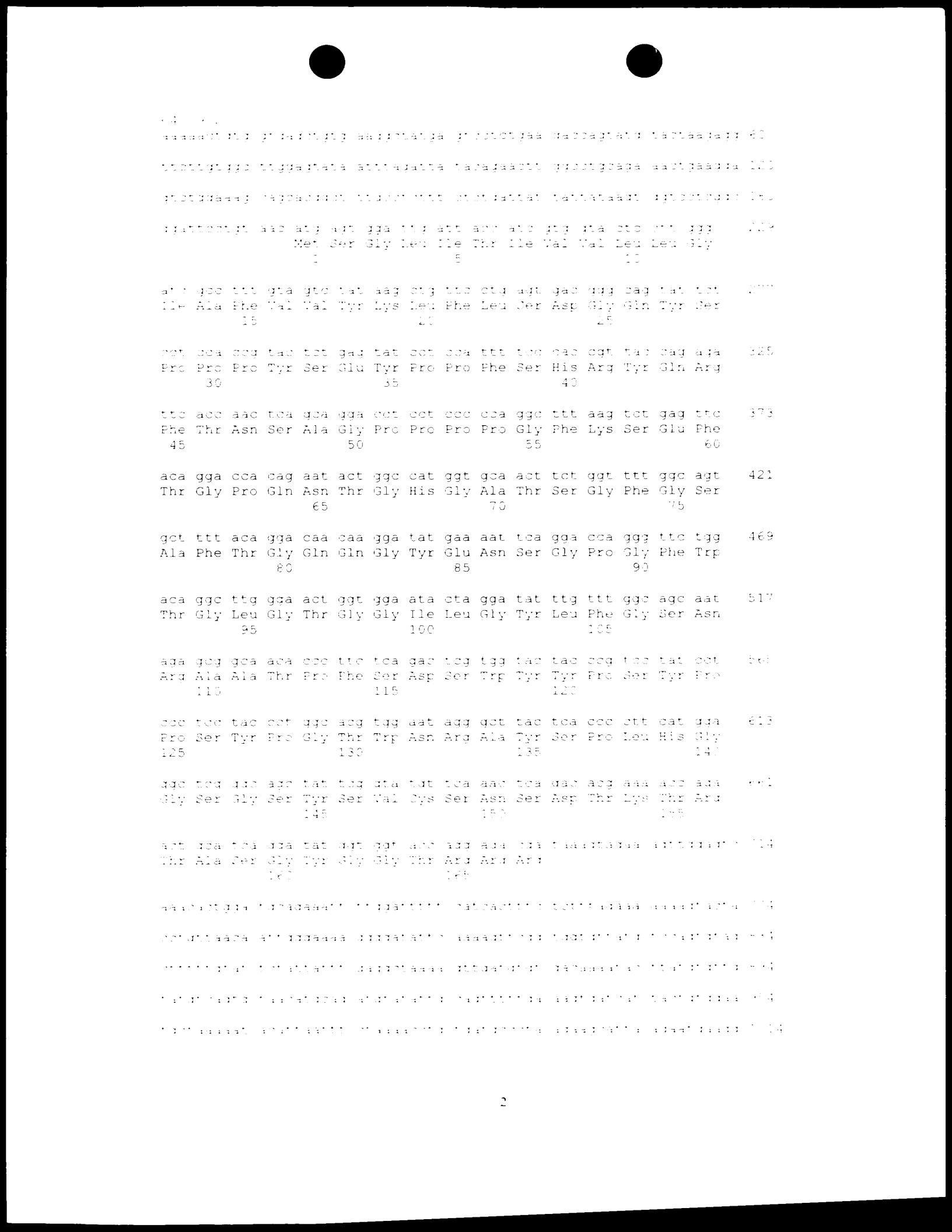

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Lys Cys Val Gly Gly Thr Ala Gly Cys Asp Ser Tyr Thr Pro Lys Val
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Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu
                85                  90                  95

Cys Lys Thr Asp Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val Val
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Ser Cys Glu Gly Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg Gly
        115                 120                 125

Ser Cys Gly Leu Gln Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu Gln
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Lys Leu Lys Glu Ser Gly Lys Gln His Gly Ile Ala Ser Phe Ser Asp
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Tyr Tyr Tyr Lys Trp Ser Ser Ala Asp Ser Cys Asn Met Ser Gly Leu
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Thr Thr Val Val Leu Leu Gly Glu Ala Phe Val Val Tyr Lys Leu
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Pro Pro Gly Phe Lys Ser Pro Phe Thr Gly Pro Asn Asn Thr Gly His
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Glu Asn Ser Gly Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly Gly Ile
260 265 270

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275 280 285

Ser Trp Tyr Tyr Pro Ser Tyr Pro Pro Ser Tyr Pro Gly Thr Trp Asn
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Leu His Leu Phe Leu Leu Thr Ala Gly Pro Ala Leu Gly Trp Asn Asp
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Pro Asp Arg Met Leu Leu Arg Asp Val Cys Ala Leu Thr Leu His Tyr
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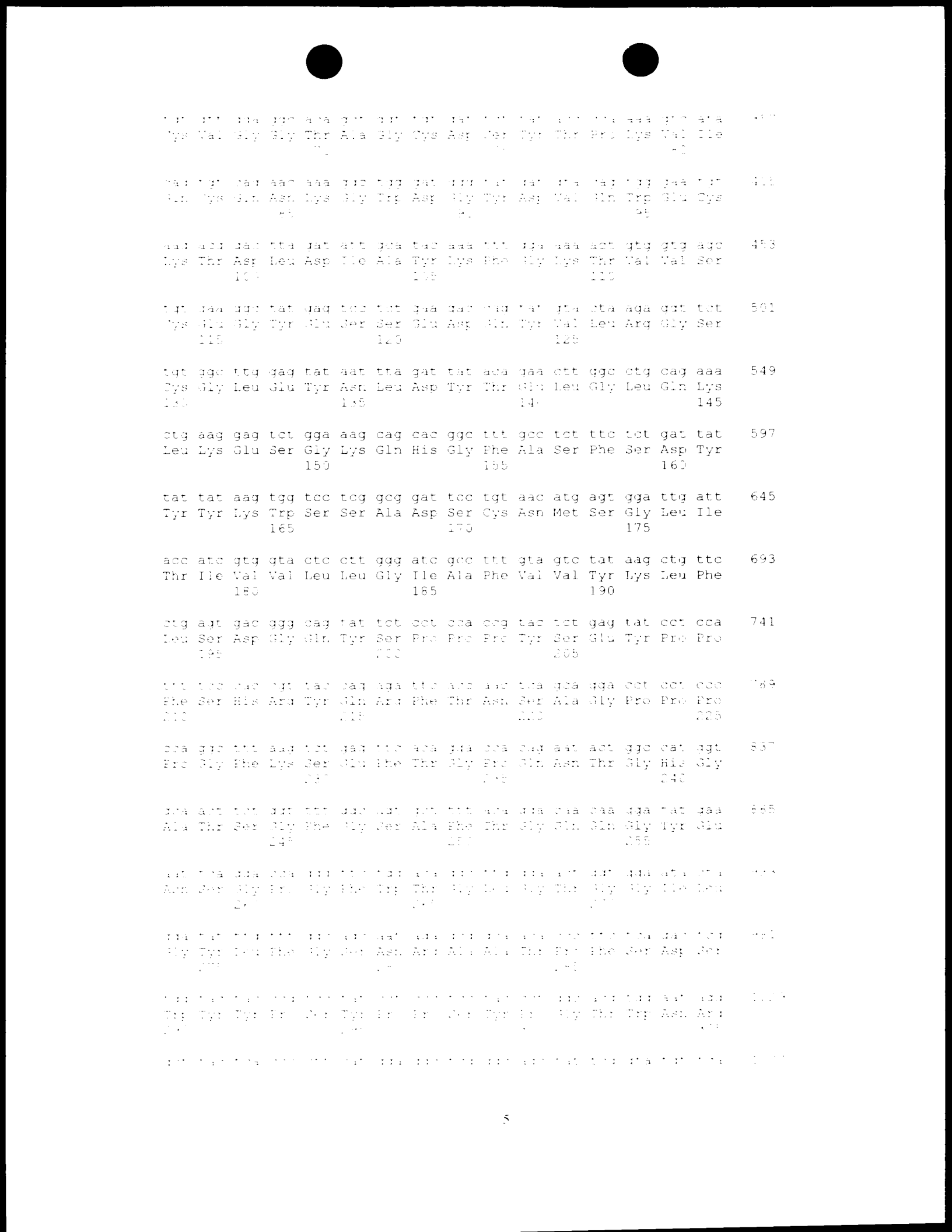

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Gly Leu Ile Ala Pro Gly Ile Thr Thr Ala Val Ser Tyr Met Ser Val
35 40 45

Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
50 55 60

Ile Trp Gly Ile Asn His Lys Asp Lys Leu Arg Asp Ile His Ala
65 70 75 80

Ile Ile Arg Lys Ile Ile Ala Asn Asp Ile Val Phe Ser Val His Ile

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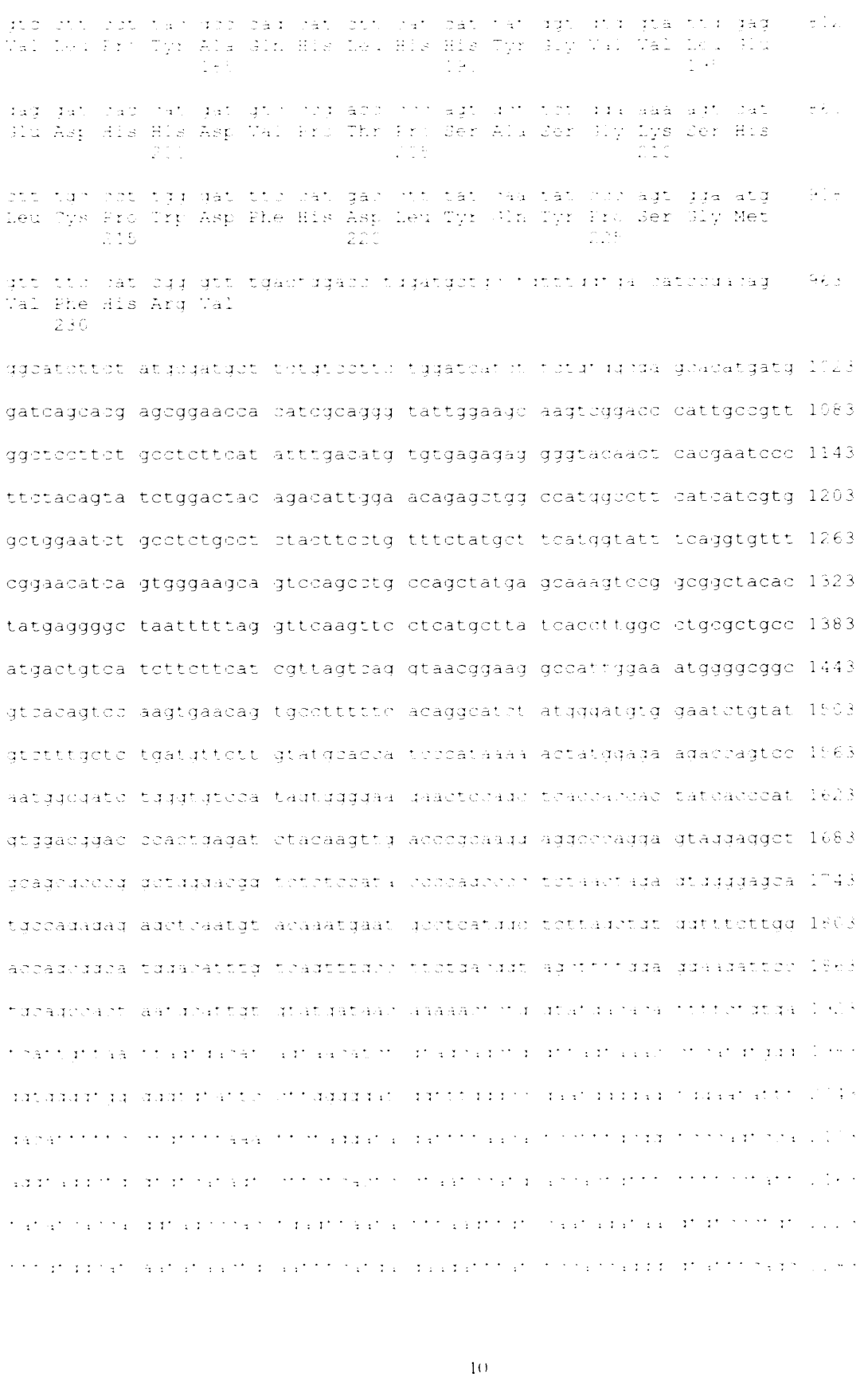

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Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile Cys Pro Pro
35 40 45

Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn Ile Ser Gln Lys
50 55 60

Asp Cys Asp Cys Leu His Val Val Glu Pro Met Pro Val Arg Gly Pro
65 70 75 80

Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu Cys Lys Tyr Glu Glu Arg
85 90 95

Ser Ser Val Thr Ile Lys Val Thr Ile Ile Ile Tyr Leu Ser Ile Leu
100 105 110

Gly Leu Leu Leu Leu Tyr Met Val Tyr Leu Thr Leu Val Glu Pro Ile
115 120 125

Leu Lys Arg Arg Leu Phe Gly His Ala Gln Leu Ile Gln Ser Asp Asp
130 135 140

Asp Ile Gly Asp His Gln Pro Phe Ala Asn Ala His Asp Val Leu Ala
145 150 155 160

Arg Ser Arg Ser Arg Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln
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Arg His Val Val Leu Ser
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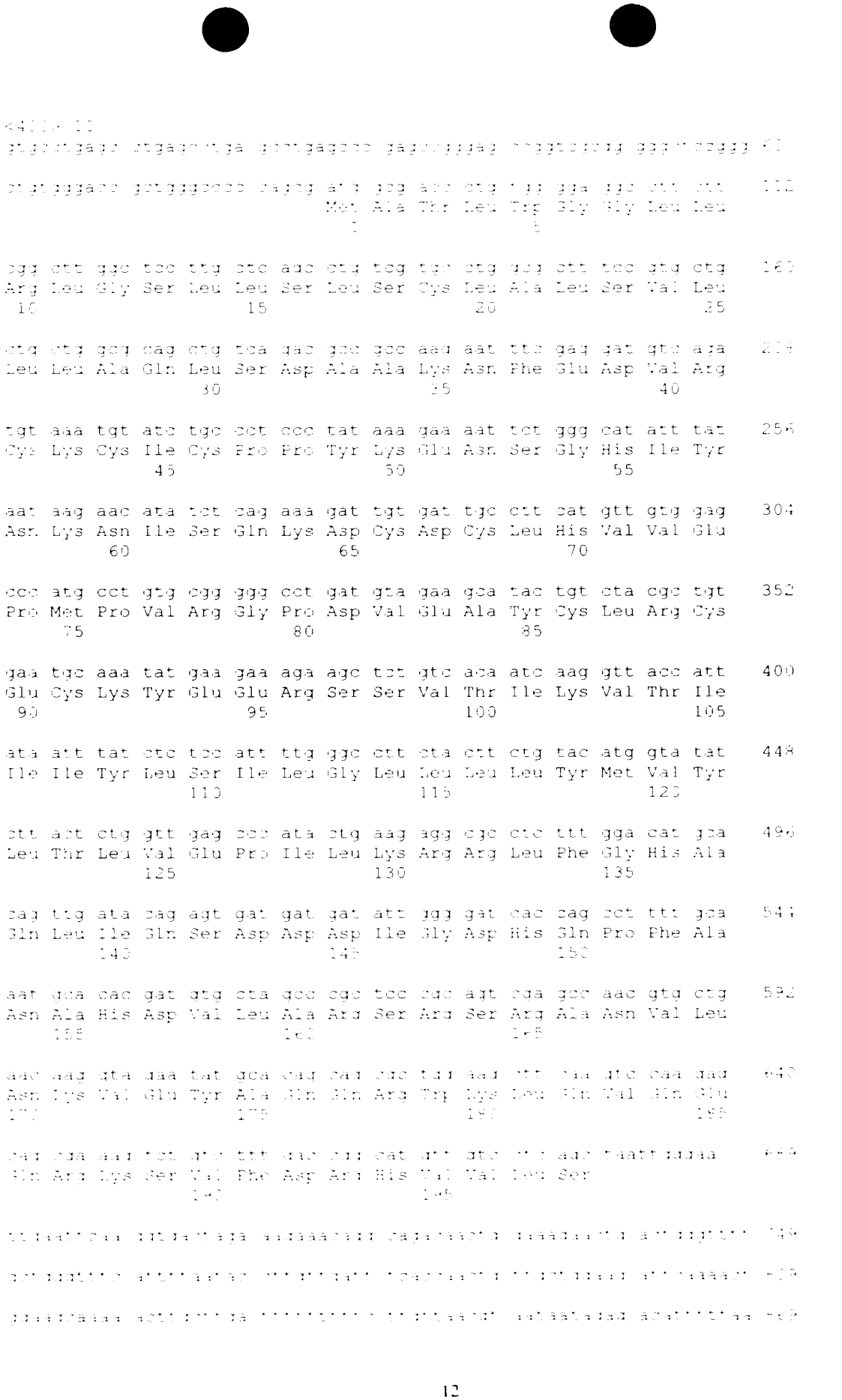

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Gln Ala Ala Gly Asp Ala Pro Pro Pro Tyr Ser Ser Ile Ser Ala Glu
         35                  40                  45

Ser Ala Ala Tyr Phe Asp Tyr Lys Asp Glu Ser Gly Phe Pro Lys Pro
     50                  55                  60

Pro Ser Tyr Asn Val Ala Thr Thr Leu Pro Ser Tyr Asp Glu Ala Glu
 65                  70                  75                  80

Arg Thr Lys Ala Glu Ala Thr Ile Pro Leu Val Pro Gly Arg Asp Glu
                 85                  90                  95

Asp Phe Val Gly Arg Asp Asp Phe Asp Asp Ala Asp Gln Leu Arg Ile
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Gly Asn Asp Gly Ile Phe Met Leu Thr Phe Phe Met Ala Phe Leu Phe
        115                 120                 125

Asn Trp Ile Gly Phe Phe Leu Ser Phe Cys Leu Thr Thr Ser Ala Ala
    130                 135                 140

Gly Arg Tyr Gly Ala Ile Ser Gly Phe Gly Leu Ser Leu Ile Lys Trp
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Ile Leu Ile Val Arg Phe Ser Thr Tyr Phe Pro Gly Tyr Phe Asp Gly
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cca cct tac agc agc att tct gca gag agc gca gca tat ttt gac tac   317
Pro Pro Tyr Ser Ser Ile Ser Ala Glu Ser Ala Ala Tyr Phe Asp Tyr
  40                  45                  50                  55

aag gat gag tct ggg ttt cca aag ccc cca tct tac aat gta gct aca   365
Lys Asp Glu Ser Gly Phe Pro Lys Pro Pro Ser Tyr Asn Val Ala Thr
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Thr Leu Pro Ser Tyr Asp Glu Ala Glu Arg Thr Lys Ala Glu Ala Thr
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Ile Pro Leu Val Pro Gly Arg Asp Glu Asp Phe Val Gly Arg Asp Asp
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Phe Asp Asp Ala Asp Gln Leu Arg Ile Gly Asn Asp Glu Ile Phe Met
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ctg acc ttc ttc atg gcc ttc ctg ttc aac tgg atc ggc ttc acc aag   557
Leu Thr Phe Phe Met Ala Phe Leu Phe Asn Trp Ile Gly Phe Thr Lys
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gga ttt ggt ctc tct cta att aaa tgg atc ctg att gtc agg ttt tcc   663
Gly Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser
            155                 160                 165

acc tat ttc cct gga tat ttt gat ggt cag tac tgg ctc tgg tgg gtg   708
Thr Tyr Phe Pro Gly Tyr Phe Asp Gly Gln Tyr Trp Leu Trp Trp Val
        170                 175                 180

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Phe Leu Val Leu Gly Phe Leu Leu Phe Leu Arg Gly Phe Ile Asn Tyr
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Arg Val Leu Phe Ile Tyr
                220

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Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu
        35   40   45

Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
    50   55   60

Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
65   70   75   80

Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
                85   90   95

Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
            100   105   110

Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
        115   120   125

Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe
    130   135   140

Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile
145   150   155   160

Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu
                165   170   175

Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr
            180   185   190

Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu
        195   200   205

Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg
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     15                  20                  25

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Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala
 30                  35                  40                  45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act         195
Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
                 50                  55                  60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat         243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
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ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat         291
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
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Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu
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Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu
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Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly
        160                 165                 170

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Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp
    175                 180                 185

tat ttt act gga tat ttc aat gga cag tat tgg ctt tgg tgg ata ttt         627
Tyr Phe Thr Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe
190                 195                 200                 205

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                210                 215                 220

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Lys Val Arg Asn Met Ser Gln Cys Met Ala Ala Ala His Arg Thr Arg
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Tyr Phe Phe Leu Leu
240

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tgtgcccatt taagatattt gcatatactt gatagaaacc ataaagttgt agcagttaag 945

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aaaatatctt tcagtatcat tgtaataatt ttttagagtt taatttgtaa agcttagcaa 1725

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aatttaattt acattcataa actactatat ttcccatctt gcaaaatcatt ttatatctca 1965

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SEQ ID NO: 15

<211> 242
<212> PRT
<213> Homo sapiens

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35 40 45

Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
50 55 60

Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
65 70 75 80

Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
85 90 95

Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
100 105 110

Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
115 120 125

Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe
130 135 140

Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile
145 150 155 160

Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu
165 170 175

Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr
180 185 190

Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu
195 200 205

Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg
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Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe
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Leu Leu

<210> 16
<211> 2324
<212> DNA
<213> Homo sapiens

<220>
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Met Asp His His Gln Pro Gly Thr Gly Arg Tyr Gln Val
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Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro
15 20 25

cct act tca aac cca gca ccg cag att gtg cag gct gtg tct tca gca 147
Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala
30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195
Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
65 70 75

cca gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu
95 100 105

aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc 387
Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe
110 115 120 125

agt gat gca gac cag ctc aga gtg ggg aat gat ggc att ttc atg ctg 435
Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu
130 135 140

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Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser
145 150 155

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Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly
160 165 170

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175 180 185

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190 195 200 205

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210 215 220

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Tyr Phe Phe Leu Leu
                                                                       
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<212> PRT
<213> Homo sapiens

<400> 17

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            20                  25                  30

Asn Ala Glu Val Ser Ala Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu
        35                  40                  45

Leu Pro Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro
    50                  55                  60

Ala Ala Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly
65                  70                  75                  80

Glu Asp Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp
                85                  90                  95

His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu
            100                 105                 110

Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro
        115                 120                 125

Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu Glu Thr
    130                 135                 140

Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr
145                 150                 155                 160

Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro
                165                 170                 175

Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala
            180                 185                 190

Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile
        195                 200                 205

Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln
    210                 215                 220

Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala
225                 230                 235                 240

Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn
                245                 250                 255

Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu
            260                 265                 270

Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr
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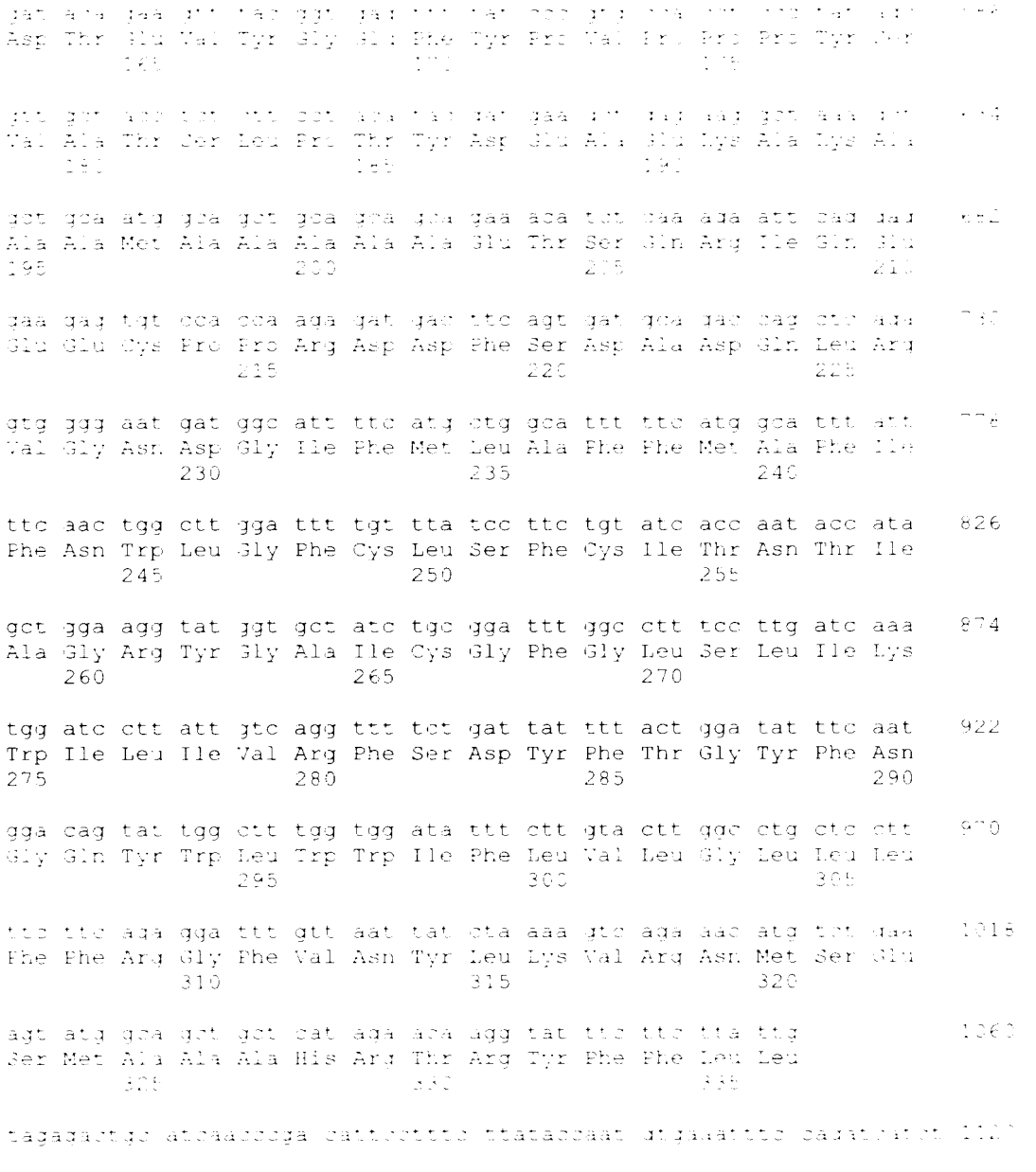

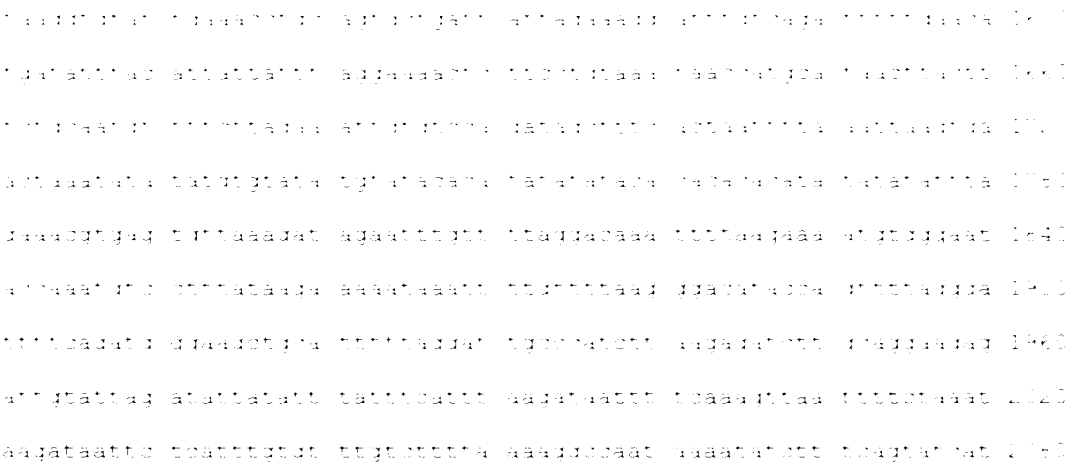

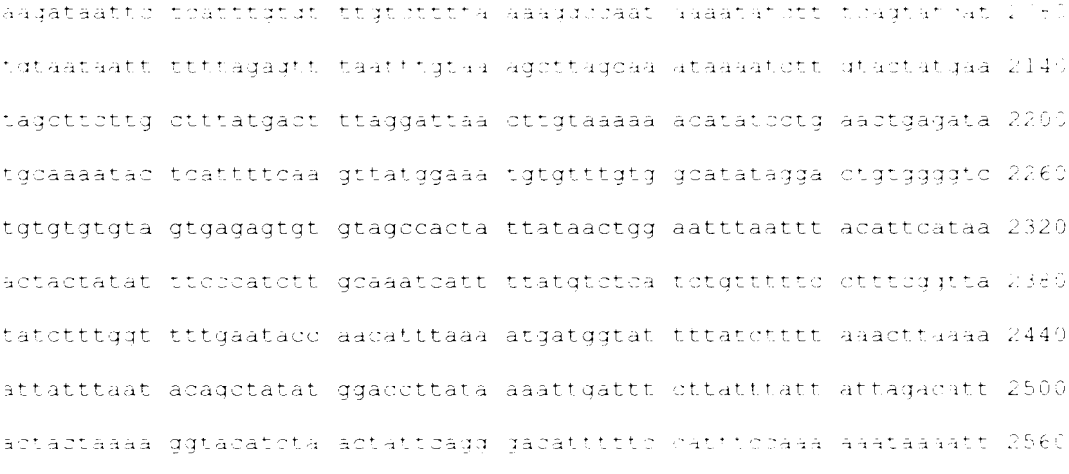

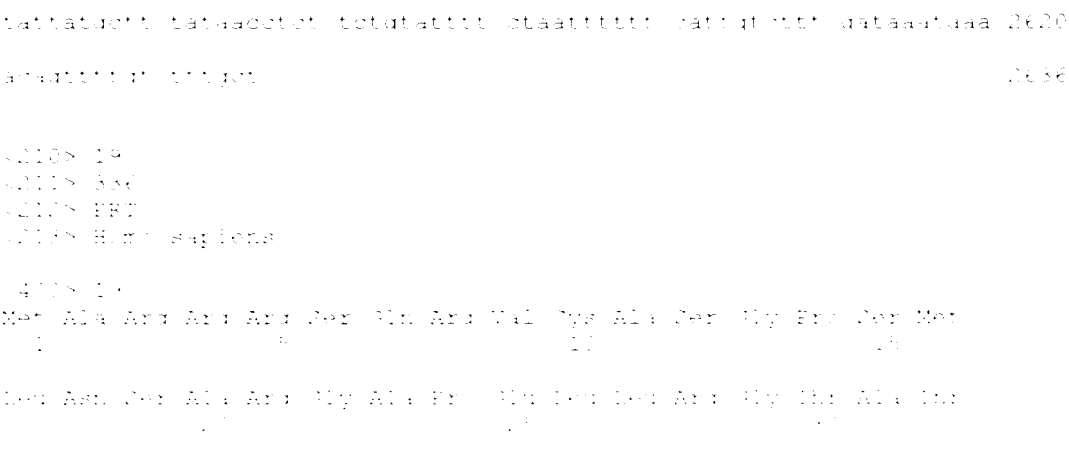

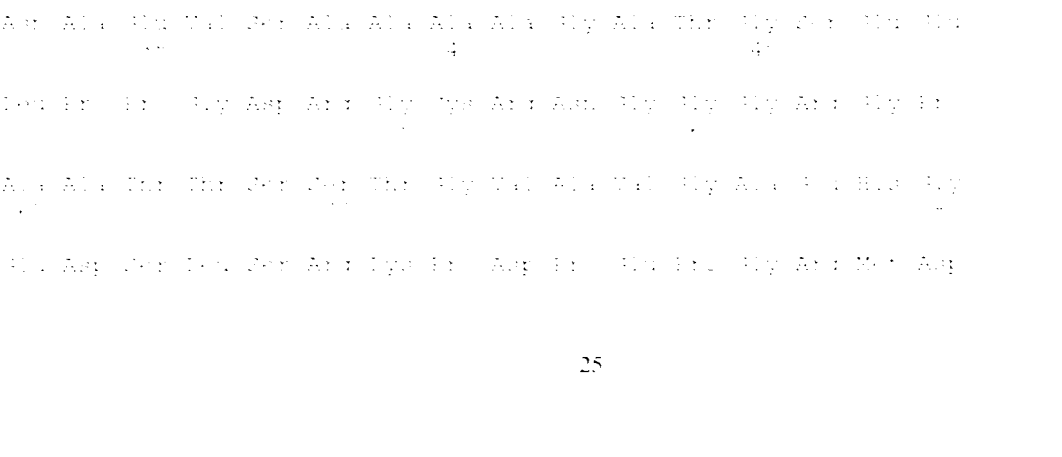

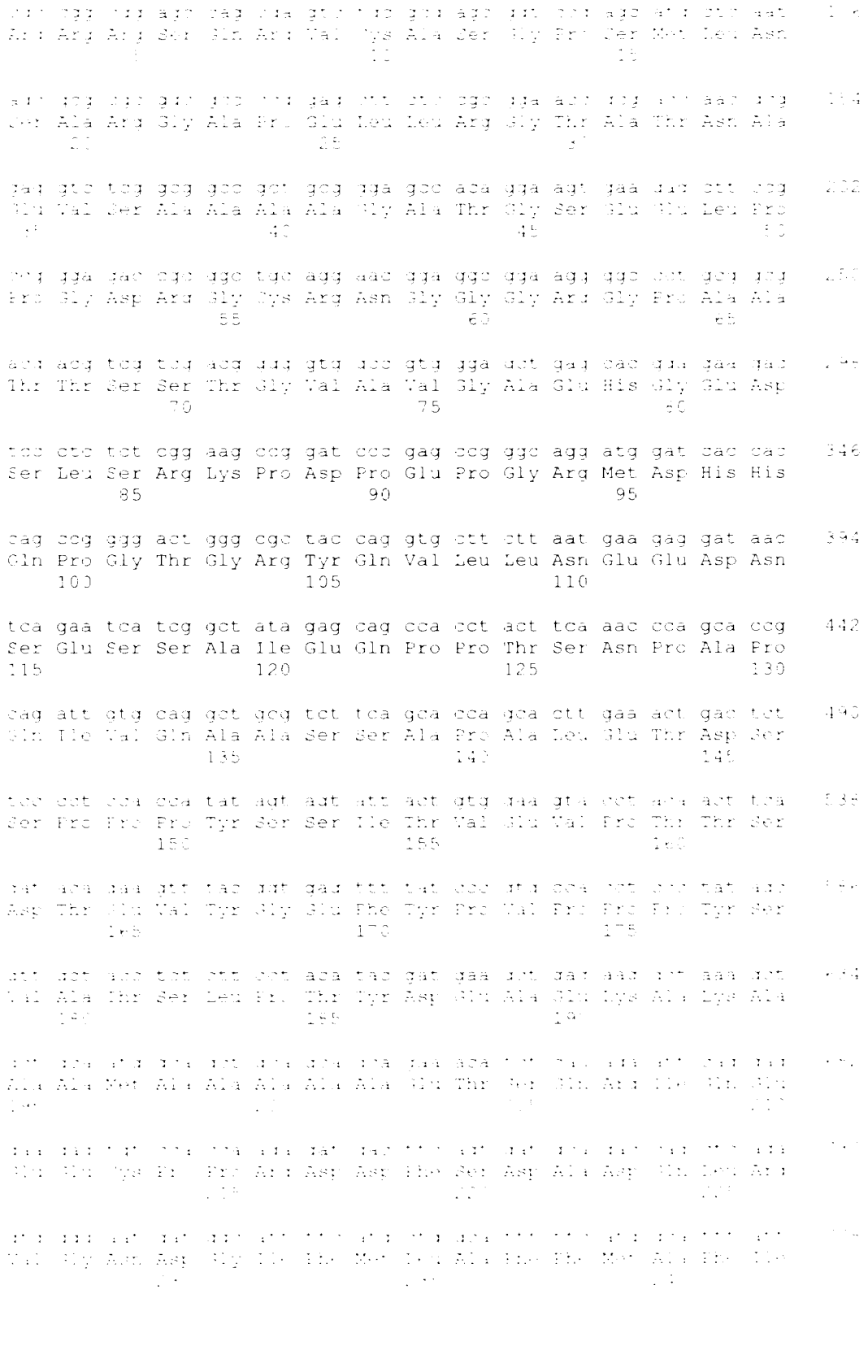

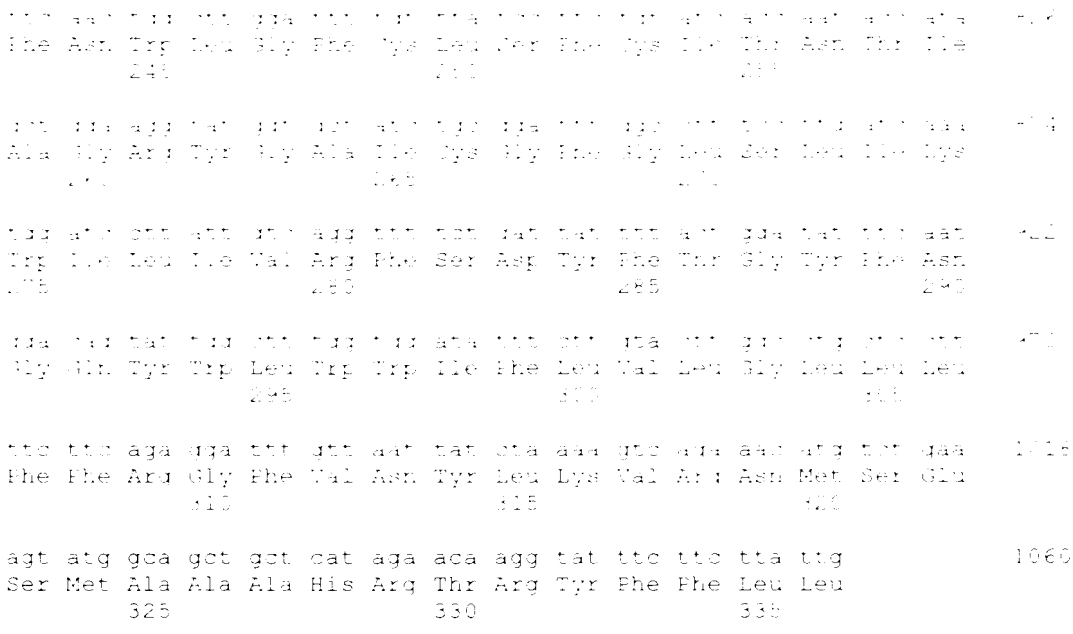

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<211> 76
<212> PRT
<213> Homo sapiens

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Lys Lys Phe Leu Glu Pro Tyr Ile Tyr Pro Leu Val Ser Pro Phe Val
            20   25   30

Ser Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn
        35   40   45

Lys Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr
    50   55   60

Lys Gly Pro Thr Glu Ile Cys Asp Lys Lys Lys Asp
65   70   75

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<210> 22
<211> 1161
<212> DNA
<213> Homo sapiens

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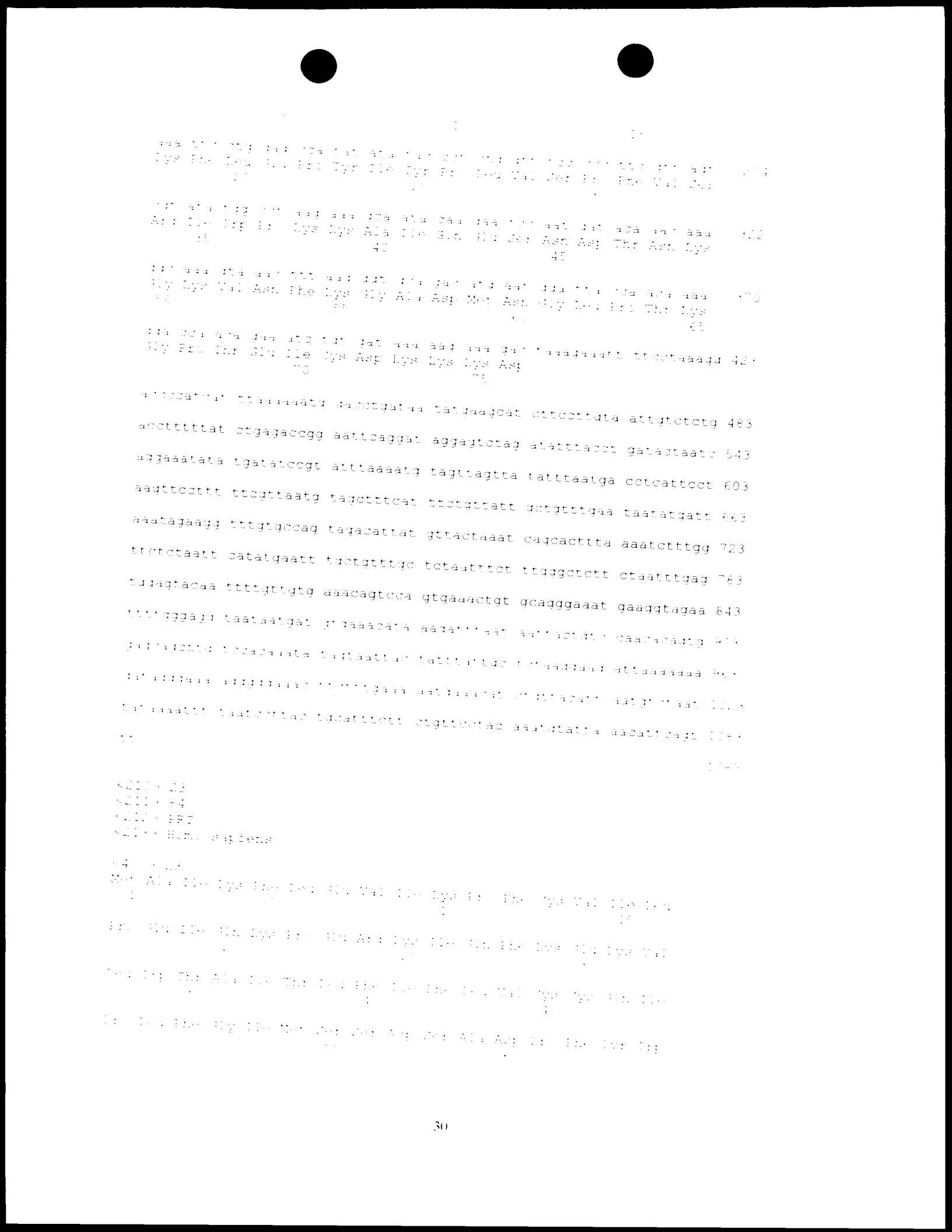

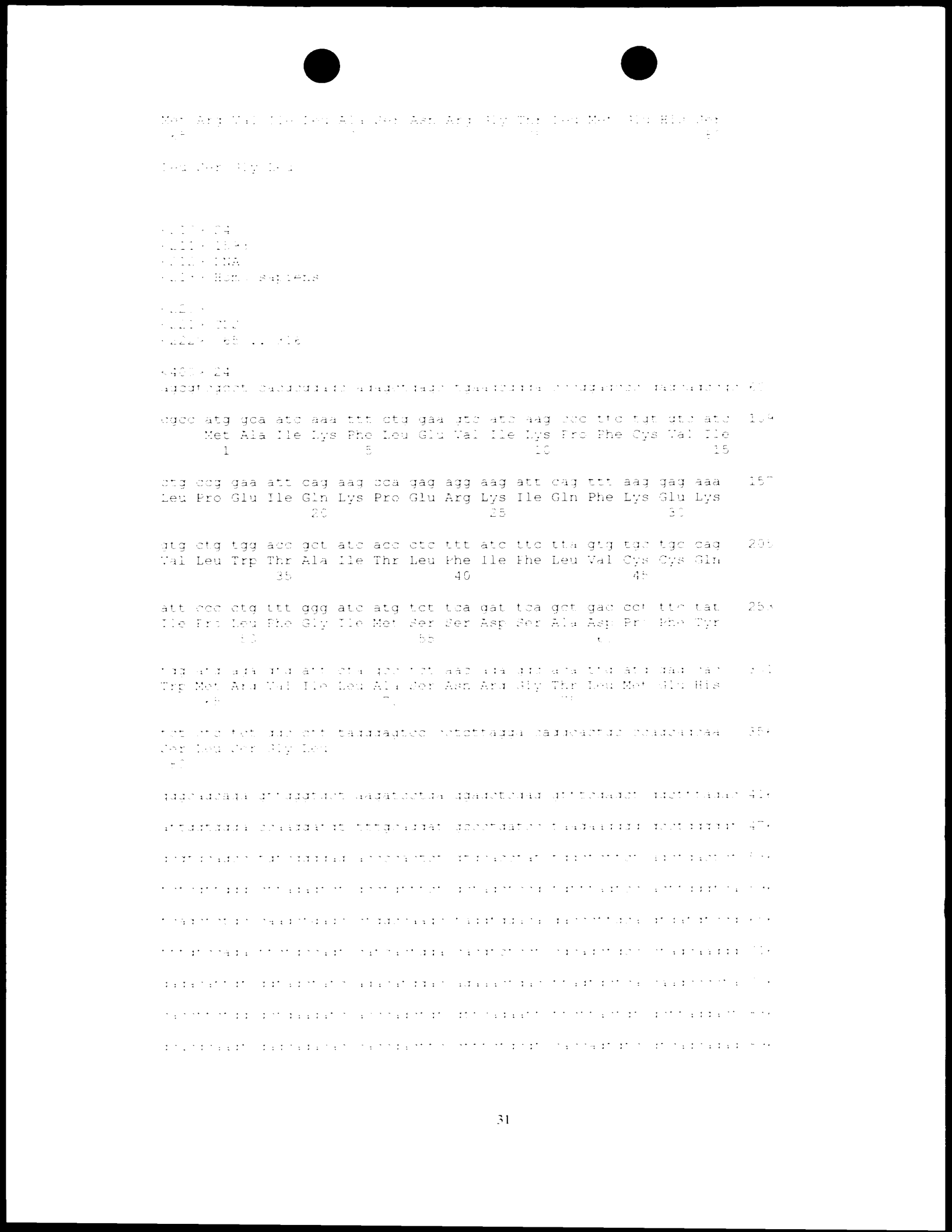

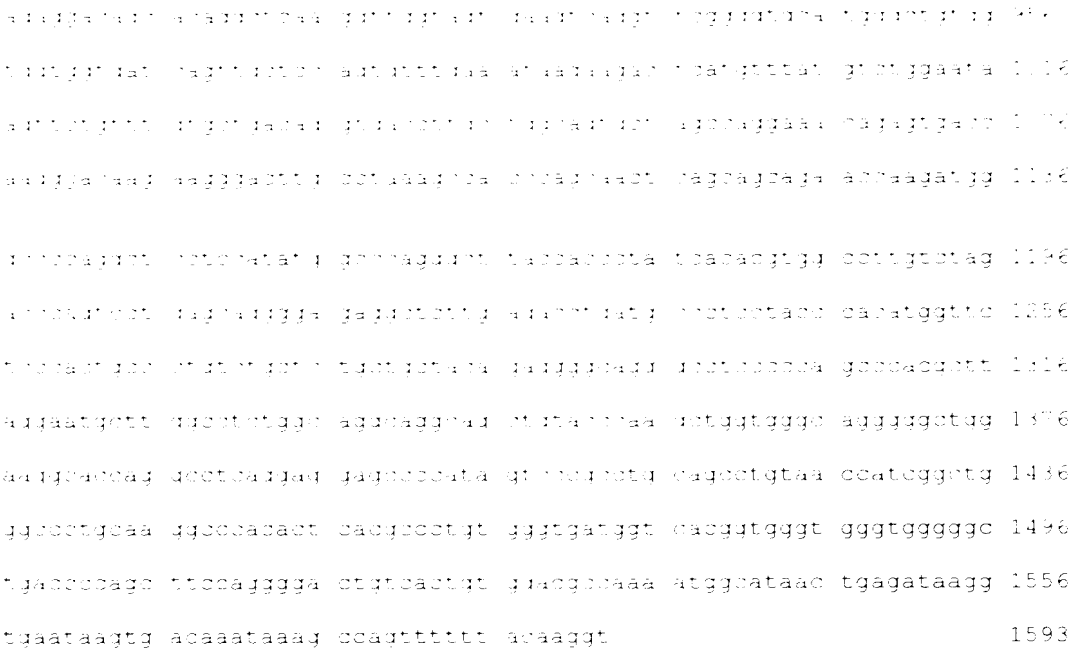

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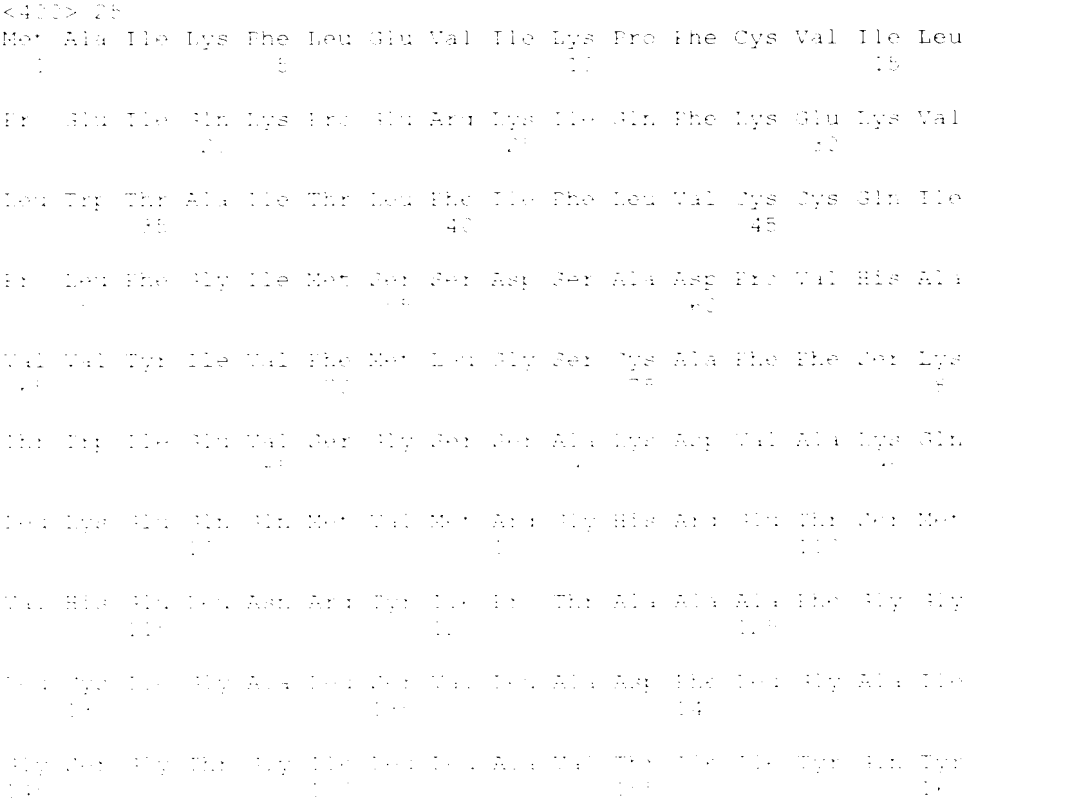

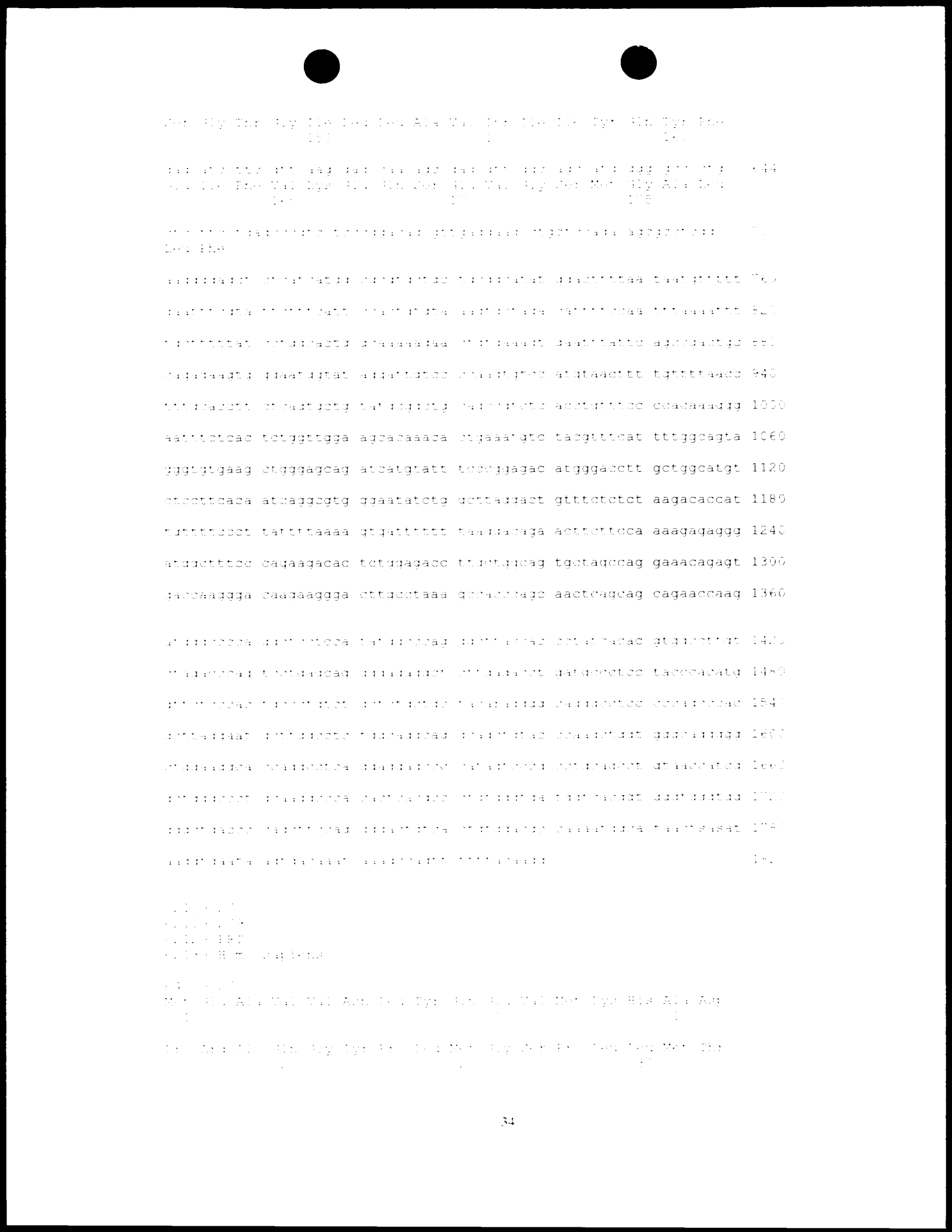

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Ile Met Ala Asn Arg Lys Ile Ile Gln Leu Arg Gly Phe Met Ile Val

Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr His Phe
65 70 75 80

Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Tyr Asp Arg Val
85 90 95

Asp Tyr Ser Asn Ser Pro Gln Ala Leu Arg Met Val Arg Val Ala Trp
100 105 110

Leu Phe Leu Phe Ser Lys Phe Ile Gln Leu Met Asp Thr Val Ile Phe
115 120 125

Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His
130 135 140

His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro
145 150 155 160

Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val
165 170 175

Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln
180 185 190

Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln
195 200 205

Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser
210 215 220

Lys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly
225 230 235 240

Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr
245 250 255

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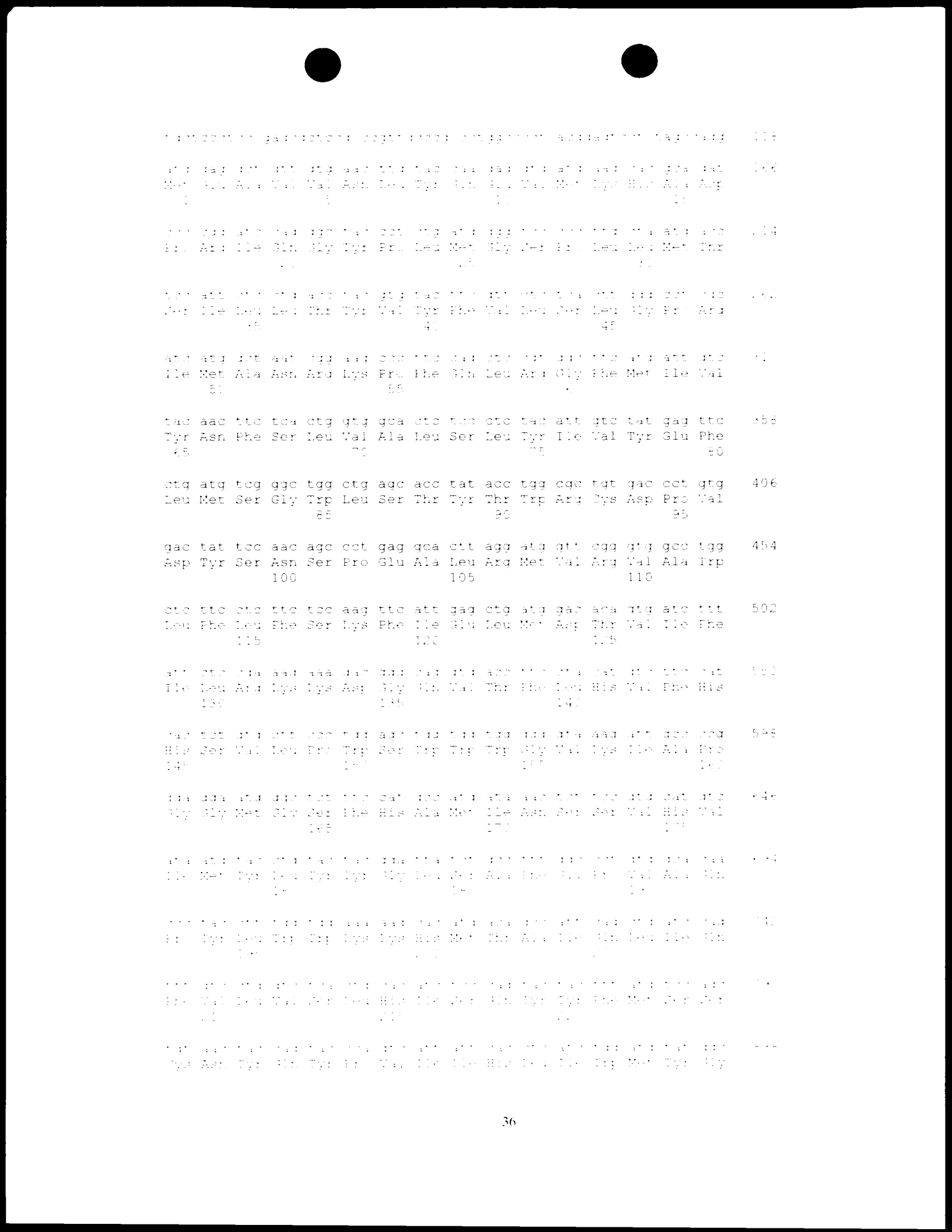
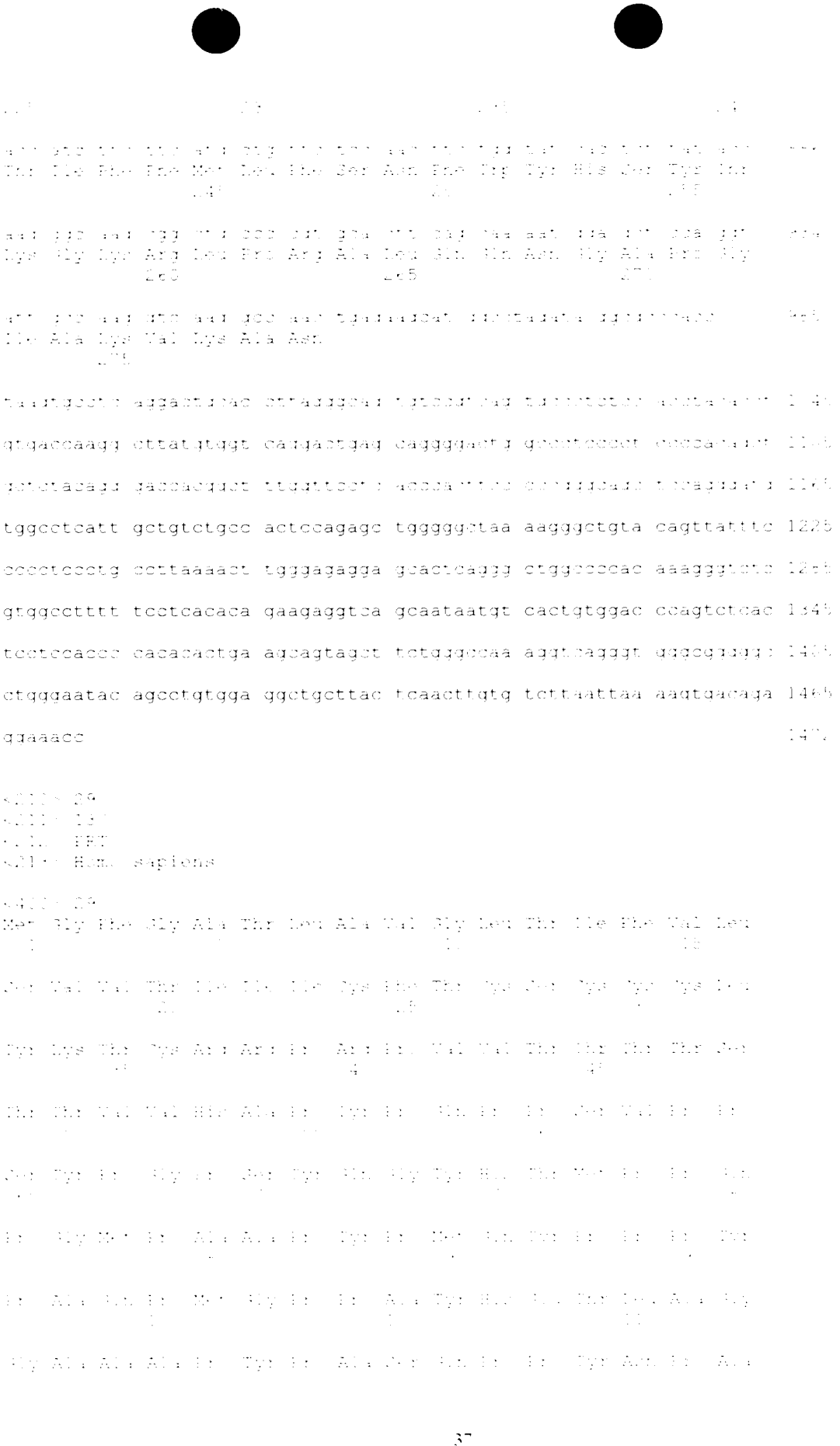
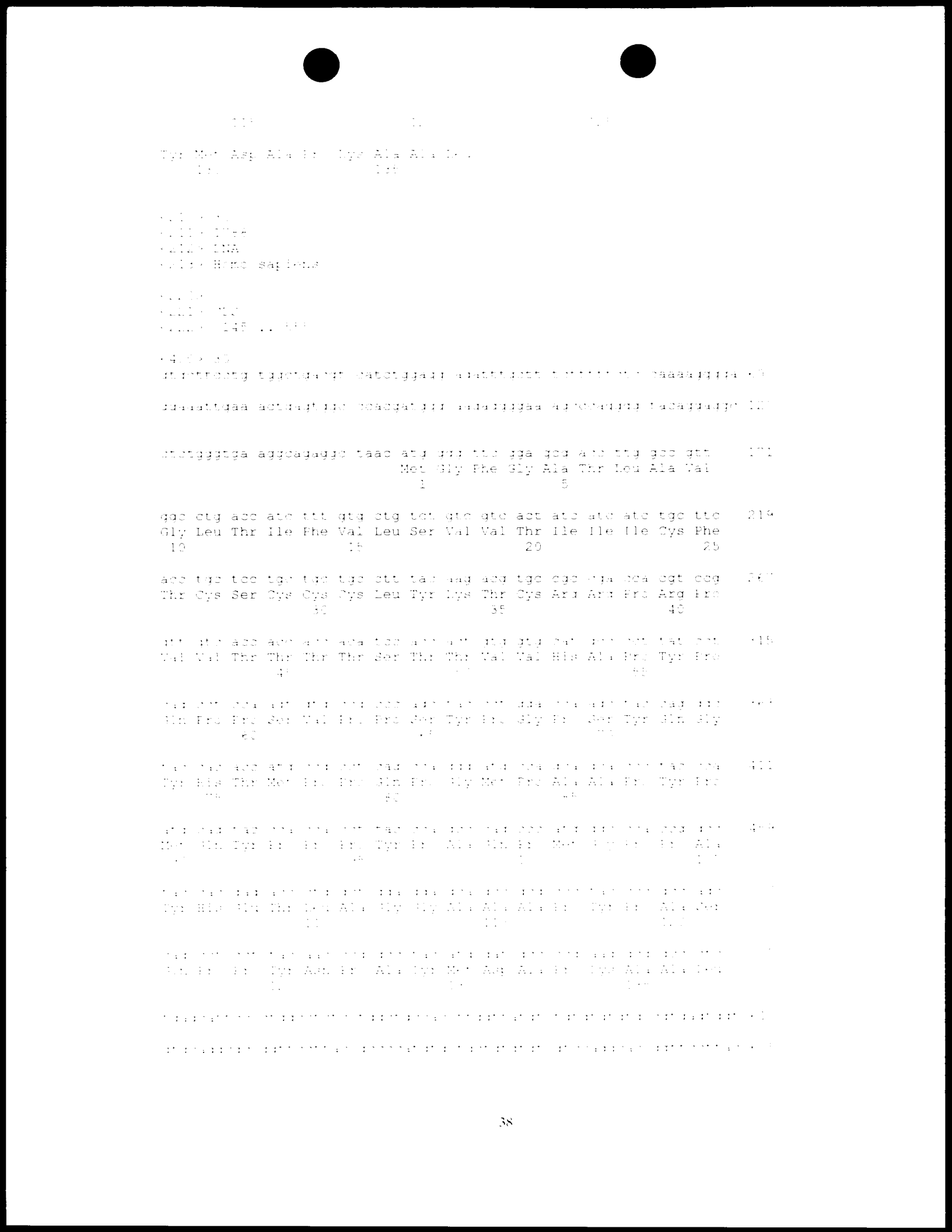
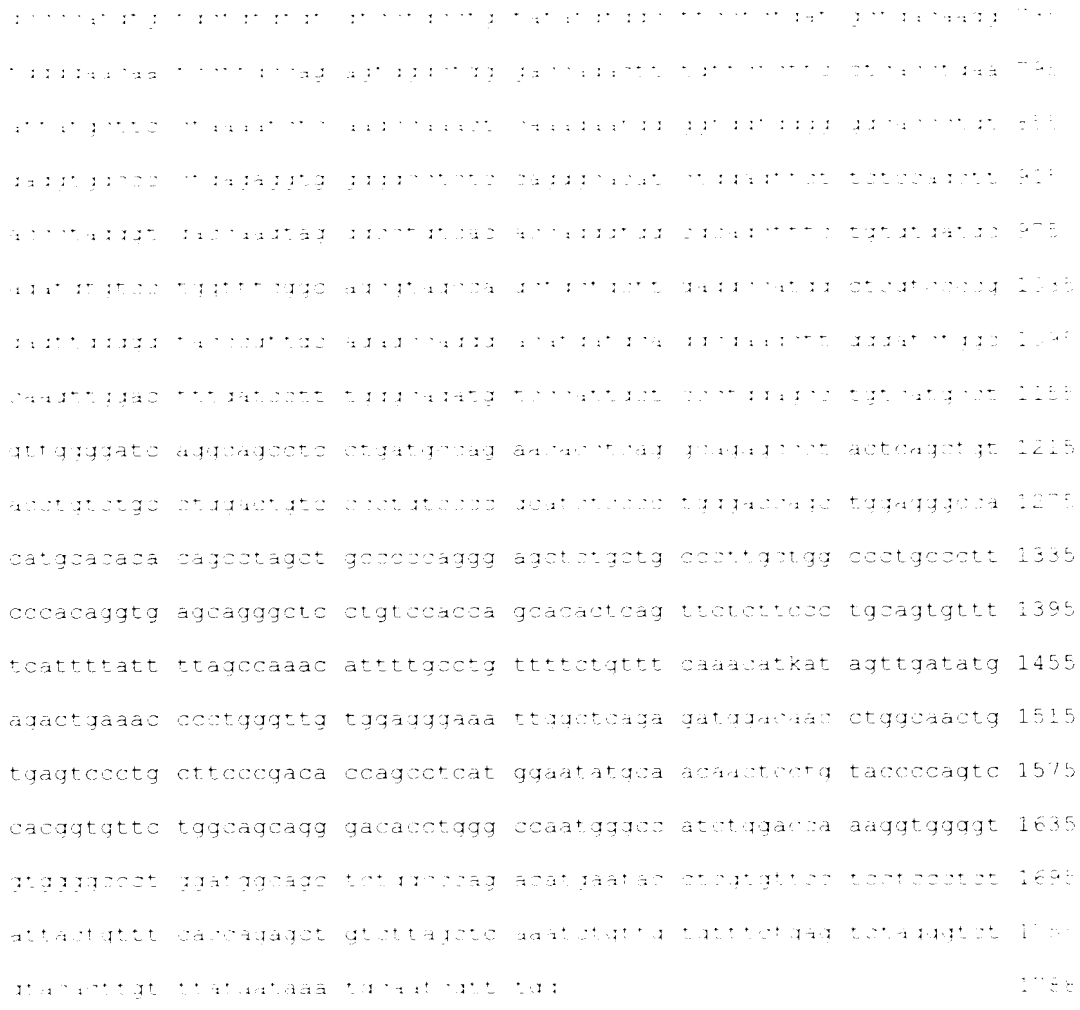
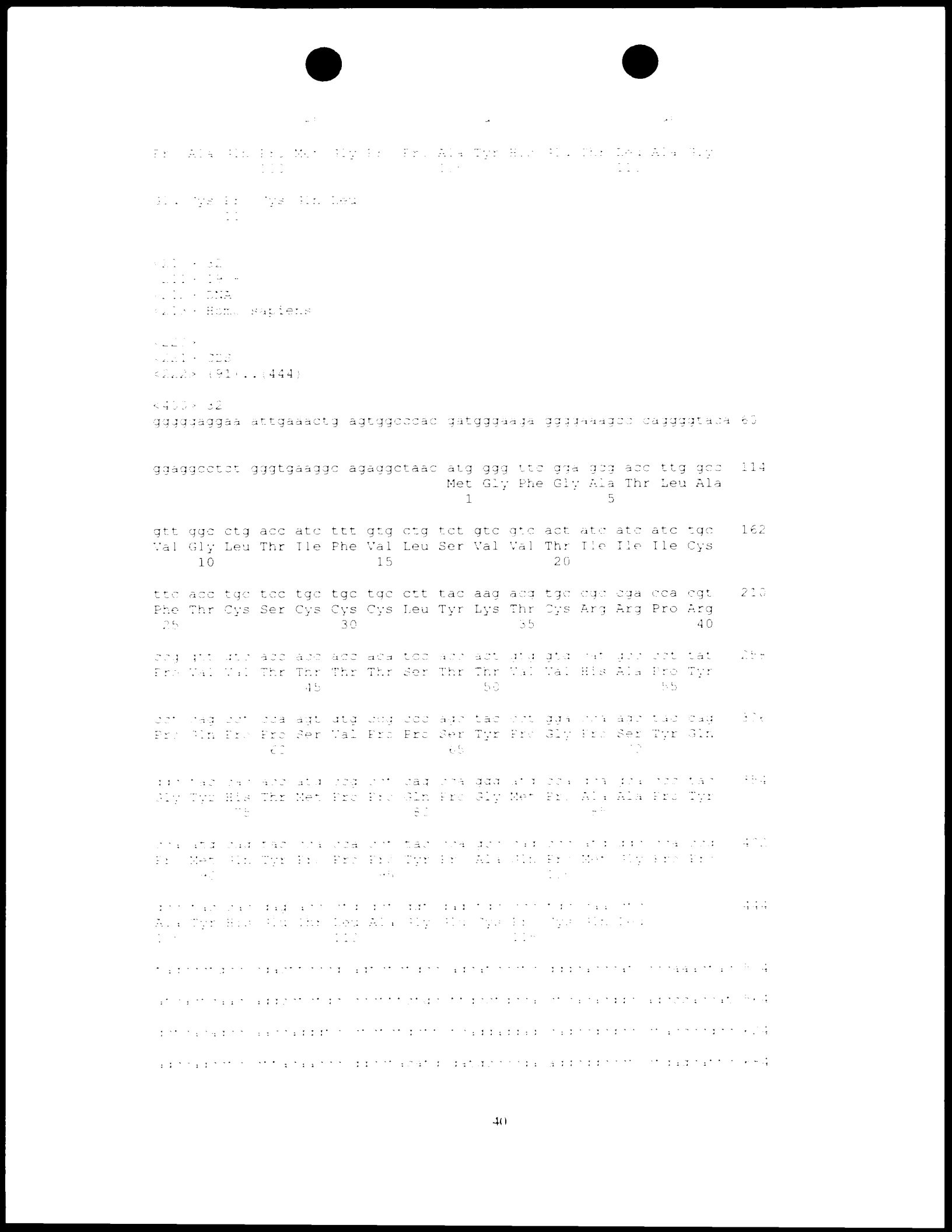
Ile Ala Lys Val Lys Ala Asn
275











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<211> 168
<212> PRT
<213> Homo sapiens

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Ile Tyr Thr Asp Ala Ile Ile Ala Tyr Pro Gln Leu Tyr Ala Pro
35 40 45

Leu His Val His Ile Gly Ala Ala Thr Val Ile Thr Met Leu Ala Ala
50 55 60

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Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Asn Ser Val Ala Val
 40                  45                  50                  55

Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val Gly Pro
                 60                  65                  70

Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Gln Gly Gly Tyr Asp Ala
             75                  80                  85

Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro Pro Pro
         90                  95                 100

Pro Pro Gly Lys Pro Pro Asn Ala Ala Gln Leu Ala Val Met Gln Gly
    105                 110                 115

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Ser Asp Gly Gly Tyr Thr Ile Trp
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<210> 34
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<213> Homo sapiens

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Val Gln Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro
 15   20   25   30

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Gln Ala Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr
                 35   40   45

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Arg Pro Ser Phe Val His Pro Gly Ala Thr Val Pro Thr Met Ser
             50   55   60

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Ala Ala Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val
         65   70   75

gct gct ggt gtt gct ttt gga gct gtt act tct gga act act ttg gtt tat 351
Ala Val Gly Val Ala Phe Gly Ala Val Thr Ser Gly Thr Thr Leu Val Tyr
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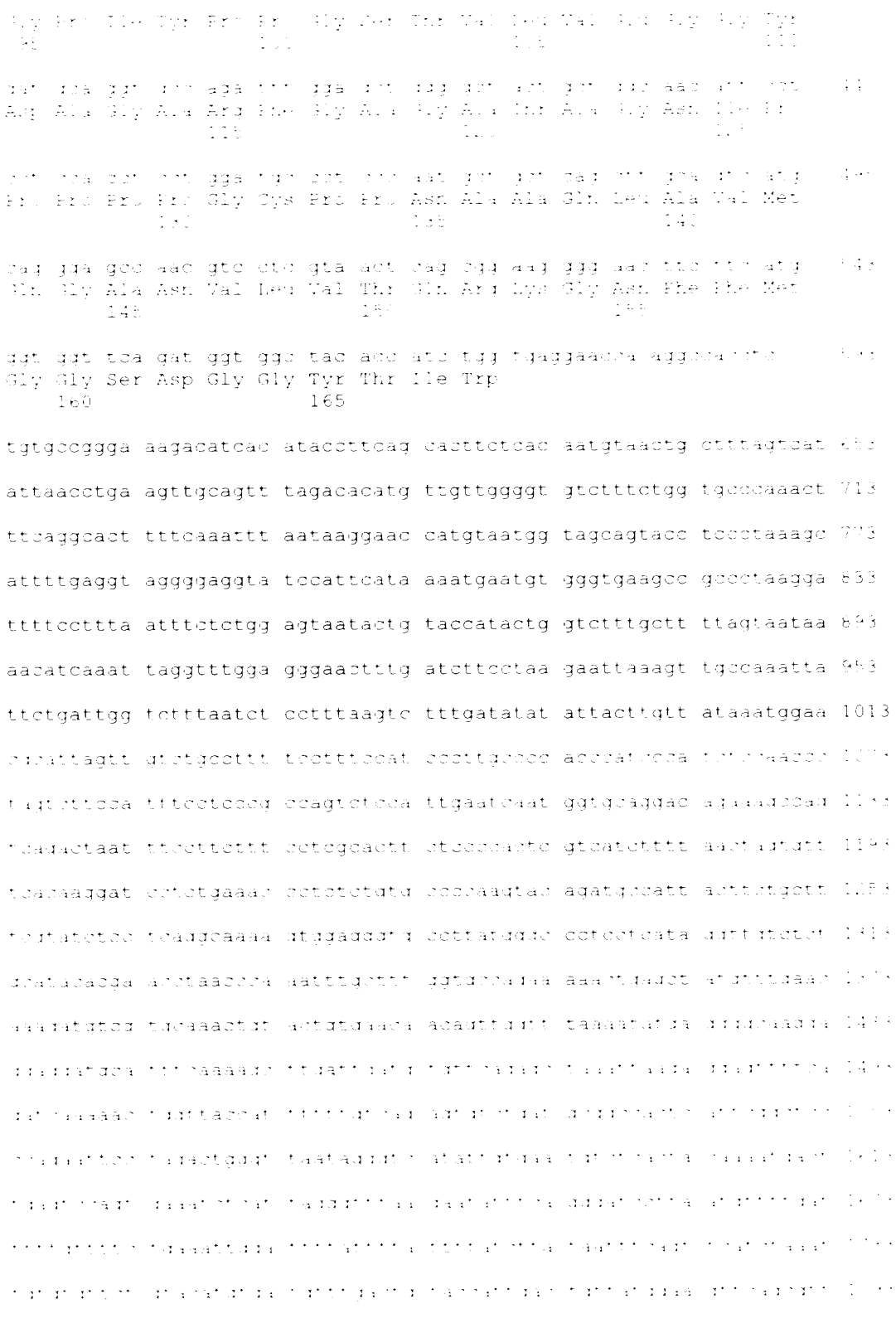

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Thr [illegible] Asn [illegible] Val Phe Asp Arg Val Gly Lys Thr Asp Pro Val Thr

Arg Gly [illegible] [illegible] Ile Thr Val Asn Tyr Leu Gly [illegible] His Phe Asp Val

Lys Pro Trp Ser Gln His [illegible] Ser Phe Ile Leu Val Gly Ile Ile [illegible]

Val Thr Ser Ile Arg Gly Leu Leu Ile Thr Leu Thr Lys Phe Phe Tyr

Ala Ile Ser Ser Ser Lys Ser Ser Asn Val Ile Val Leu Leu Leu Ala

Gln Ile Met Gly Met Tyr Phe Val Ser Ser Val Leu Leu Ile Arg Met

Ser Met Pro Leu Glu Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu

Leu Gln Phe Asn Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val

Ser Ala Leu Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala

Pro Glu Lys Gln Met Ala Pro

<210> 36
<211> 1903
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (116)...(1480)

<400> 36
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tactatggcc tcaggaagtg gaaagtgaag [illegible] [illegible] [illegible] [illegible]

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[illegible]

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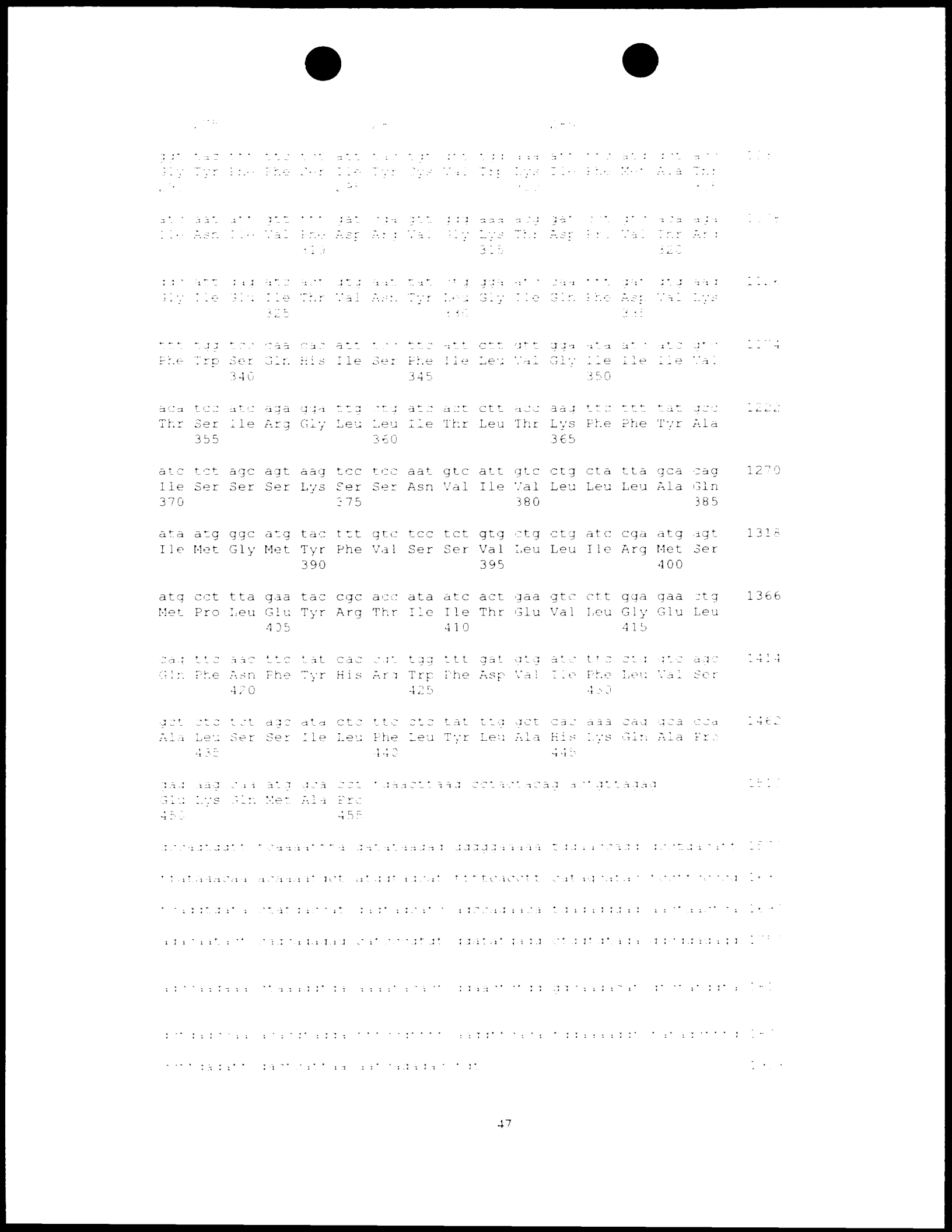

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<212> PRT
<213> Homo sapiens

<400> 37
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Gly Ala Ala Asp Lys Ser Ala Val Val Ala Ala Ala Ala Pro Ala Ser
35 40 45

Val Ala Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile
50 55 60

Ile Ser Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser
65 70 75 80

His Tyr Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met
85 90 95

Met Gly Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala
100 105 110

Ser Leu Leu Ala Asn Gly His Asp Leu Ala Ala Ala Met Ala Val Asp
115 120 125

Lys Ser Asn Pro Thr Ser Lys His Lys Ser Gly Ala Val Ala Ser Leu
130 135 140

Leu Ser Lys Ala Glu Arg Ala Thr Glu Leu Ala Ala Glu Gly Gln Leu
145 150 155 160

Thr Leu Gln Gln Phe Ala Gln Ser Thr Glu Met Leu Lys Arg Val Val
165 170 175

Gln Glu His Leu Pro Leu Met Ser Glu Ala Gly Ala Gly Leu Pro Asp
180 185 190

Met Glu Ala Val Ala Gly Ala Glu Ala Leu Asn Gly Gln Ser Asp Phe
195 200 205

Pro Tyr Leu Gly Ala Phe Pro Ile Asn Pro Gly Leu Phe Ile Met Thr
210 215 220

Pro Ala Gly Val Phe Leu Ala Glu Ser Ala Leu His Met Ala Gly Leu
225 230 235 240

Ala Glu Tyr Pro Met Gln Gly Glu Leu Ala Ser Ala Ile Ser Ser Gly
245 250 255

Lys Lys Lys Arg Lys Arg Lys Gly Met Lys Ala Pro Lys Arg Arg Arg
260 265 270

Ile Asn Lys His His Lys Ser Ser Lys Arg Asn Arg Lys Thr Gly His
275 280 285

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Gln Ile Lys Lys Phe Arg Lys Tyr Lys Leu Arg Leu Lys Lys Lys Ile Ser
                    290                 295                 300

Ala Ala Leu Pro Lys Val Met Leu Pro Thr Lys Ala Ala Pro Arg Trp
305                 310                 315                 320

Phe Gln
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<210> 35
<211> 1445
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (292)..(1251)

<400> 38

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tcggagagcc gagtgaagac atttccacct ggacacctga ccatgtgcct gccctgagca  180

gcgaggccca ccaggcatct ctgttgtggg cagcagggcc aggtcctggt ctgtggaccc  240

tcggcagttg gcaggctccc tctgcagtgg ggtctgggcc tcggccccac c atg tcg  297
                                                        Met Ser
                                                          1

agc ctc ggc ggt ggc tcc cag gat gcc ggc ggc agt agc agc agc agc  345
Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser Ser Ser
          5                  10                  15

acc aat ggc agc ggt ggc agt ggc agc agt ggc cca aag gca gga gca  393
Thr Asn Gly Ser Gly Gly Ser Gly Ser Ser Gly Pro Lys Ala Gly Ala
     20                  25                  30

gca gac aag agt gca gtg gtg gct gcc gcc gca cca gcc tca gtg gca  441
Ala Asp Lys Ser Ala Val Val Ala Ala Ala Ala Pro Ala Ser Val Ala
 35                  40                  45                  50

gat gac acg cca ccc ccc gag agg agg aac aag agc gat ttt ttc agt  489
Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Asp Phe Phe Ser
                 55                  60                  65

gag ccc ctg aat aag agc ttg agg agg tct tcc cgc ccg tct tcc cac  537
Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser His Tyr
             70                  75                  80

tct tct ttc ggg ccc tcc ggg ggc ggc tct ggc ggc ggc tct atg atg  585
Ser Ser Phe Gly Pro Ser Gly Gly Gly Ser Gly Gly Gly Ser Met Met Gly
         85                  90                  95

ggg ggc cct agc gcc gac aag gcc acg gcc gcc gcc gcc gcc gcc gcc  633
Gly Gly Pro Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala Ala Ser Leu
    100                 105                 110
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ttg gct aat ggg cat gac ctg tta gta gct atg gcg tta gac aaa agt
Leu Ala Asn Gly His Asp Leu Ala Ala Ala Met Ala Val Asp Lys Ser
115 120 125 130

aac cct acc tca aag cac aaa agt ggt gct ttg gcc agc ctg ttg agc
Asn Pro Thr Ser Lys His Lys Ser Gly Ala Val Ala Ser Leu Leu Ser
135 140 145

aag gca gag cgg gcc acg gag ctg gca gcc gag gga cag ctg acg ctg
Lys Ala Glu Arg Ala Thr Glu Leu Ala Ala Glu Gly Gln Leu Thr Leu
150 155 160

cag cag ttt gcg cag tcc aca gag atg ctg aag cgc gtg gtc cag gag
Gln Gln Phe Ala Gln Ser Thr Glu Met Leu Lys Arg Val Val Gln Glu
165 170 175

cat ctc ccg ctg atg agc gag gcg ggt gct ggc ctg cct gac atg gag
His Leu Pro Leu Met Ser Glu Ala Gly Ala Gly Leu Pro Asp Met Glu
180 185 190

gct gtg gca ggt gcc gaa gcc ctc aat ggc cag tcc gac ttc ccc tac
Ala Val Ala Gly Ala Glu Ala Leu Asn Gly Gln Ser Asp Phe Pro Tyr
195 200 205 210

ctg ggc gct ttc ccc atc aac cca ggc ctc ttc att atg acc ccg gca
Leu Gly Ala Phe Pro Ile Asn Pro Gly Leu Phe Ile Met Thr Pro Ala
215 220 225

ggt gtg ttc ctg gcc gag agc gcg ctg cac atg gcg ggc ctg gct gag
Gly Val Phe Leu Ala Glu Ser Ala Leu His Met Ala Gly Leu Ala Glu
230 235 240

tac ccc atg cag gga gag ctg gcc tct gcc atc agc tcc ggc aag aag
Tyr Pro Met Gln Gly Glu Leu Ala Ser Ala Ile Ser Ser Gly Lys Lys
245 250 255

aag cgg aaa cgc tgc ggc atg tgc gcg ccc tgc cgg cgg cgc cgc atc aac
Lys Arg Lys Arg Cys Gly Met Cys Ala Pro Cys Arg Arg Arg Arg Ile Asn
260 265 270

tgc gag cag tgc agc agt tgt agg aat cga aag act ggc cat cag att
Cys Glu Gln Cys Ser Ser Cys Arg Asn Arg Lys Thr Gly His Gln Ile
275 280 285 290

tgc aaa ttc aga aaa tgt gag gaa ctc aaa aag aag cct tcc gct gct
Cys Lys Phe Arg Lys Cys Glu Glu Leu Lys Lys Lys Pro Ser Ala Ala
295 300 305

ctg gag aag gtg atg ctt ccg aca gga gcc gcc ttc aga tgg ttt cag
Leu Glu Lys Val Met Leu Pro Thr Gly Ala Ala Phe Arg Trp Phe Gln
310 315 320

<210> 18
<211> 311
<212> PRT
<213> Homo sapiens

<400> 18
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1 5 10 15

Leu Cys His Thr Leu Gly Pro Val His Pro Pro Asp Pro Gln Arg His
20 25 30

Pro Asn Thr Leu Ser Phe Arg Cys Ser Leu Ala Asp Phe Gln Ile Glu
35 40 45

Lys Lys Ile Gly Arg Gly Gln Phe Ser Glu Val Tyr Lys Ala Thr Cys
50 55 60

Leu Leu Asp Arg Lys Thr Val Ala Leu Lys Lys Val Gln Ile Phe Glu
65 70 75 80

Met Met Asp Ala Lys Ala Arg Gln Asp Cys Val Lys Glu Ile Gly Leu
85 90 95

Leu Lys Gln Leu Asn His Pro Asn Ile Ile Lys Tyr Leu Asp Ser Phe
100 105 110

Ile Glu Asp Asn Glu Leu Asn Ile Val Leu Glu Leu Ala Asp Ala Gly
115 120 125

Asp Leu Ser Gln Met Ile Lys Tyr Phe Lys Lys Gln Lys Arg Leu Ile
130 135 140

Pro Glu Arg Thr Val Trp Lys Tyr Phe Val Gln Leu Cys Ser Ala Val
145 150 155 160

Glu His Met His Ser Arg Arg Val Met His Arg Asp Ile Lys Pro Ala
165 170 175

Asn Val Phe Ile Thr Ala Thr Gly Val Val Lys Leu Gly Asp Leu Gly
180 185 190

Leu Gly Arg Phe Phe Ser Ser Glu Thr Thr Ala Ala His Ser Leu Val
195 200 205

Gly Thr Pro Tyr Tyr Met Ser Pro Glu Arg Ile His Glu Asn Gly Tyr
210 215 220

Asn Phe Lys Ser Asp Ile Trp Ser Leu Gly Cys Leu Leu Tyr Glu Met
225 230 235 240

Ala Ala Leu Gln Ser Pro Phe Tyr Gly Asp Lys Met Asn Leu Phe Ser
245 250 255

Leu Cys Gln Lys Ile Glu Gln Cys Asp Tyr Pro Pro Leu Pro Ser Glu
260 265 270

His Tyr Ser Glu Lys Leu Arg Glu Leu Val Ser Met Cys Ile Tyr Pro
275 280 285

Asp Pro His Gln Arg Pro Asp Ile Gly Tyr Val His Gln Val Ala Lys

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     289                 295                 300

Gln Met His Ile Trp Met Ser Ser Thr
305                 310

<210> 41
<211> 1547
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (153)...(1091)

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ctccagccgc ccgcgggcca gcgcaccggt ccccccagcgg cagccgagcc cgcccgcgcg 120

ccgtccgtgc cctcgtgagg ctggcatgca gg atg gca gga cag ccc ggc cac   173
                                    Met Ala Gly Gln Pro Gly His
                                      1               5

atg ccc cat gga ggg agt tcc aac aac ctc tgc cac acc ctg ggg cct   221
Met Pro His Gly Gly Ser Ser Asn Asn Leu Cys His Thr Leu Gly Pro
          10                  15                  20

gtg cat cct cct gac cca cag agg cat ccc aac acg ctg tct ttt cgc   269
Val His Pro Pro Asp Pro Gln Arg His Pro Asn Thr Leu Ser Phe Arg
      25                  30                  35

tgc tcg ctg gcg gac ttc cag atc gaa aag aag ata ggc cga gga cag   317
Cys Ser Leu Ala Asp Phe Gln Ile Glu Lys Lys Ile Gly Arg Gly Gln
  40                  45                  50                  55

ttc agc gag gtg tac aag gcc acc tgc ctg ctg gac agg aag aca gtg   365
Phe Ser Glu Val Tyr Lys Ala Thr Cys Leu Leu Asp Arg Lys Thr Val
                  60                  65                  70

gct ctg aag aag gtg cag atc ttt gag atg atg gac gcc aag gcg agg   413
Ala Leu Lys Lys Val Gln Ile Phe Glu Met Met Asp Ala Lys Ala Arg
              75                  80                  85

cag gac tgt gtc aag gag atc ggc ctc ttg aag caa ctg aac cac cca   461
Gln Asp Cys Val Lys Glu Ile Gly Leu Leu Lys Gln Leu Asn His Pro
          90                  95                 100

aat atc atc aag tat ttg gac tcg ttt atc gag gat aac gag ttg aac   509
Asn Ile Ile Lys Tyr Leu Asp Ser Phe Ile Glu Asp Asn Glu Leu Asn
     105                 110                 115

att gtg ctg gag ttg atg gac gca ggg gac ctg tcg cag atg atc aag   557
Ile Val Leu Glu Leu Met Asp Ala Gly Asp Leu Ser Gln Met Ile Lys
 120                 125                 130                 135

tac ttt aag aag cag aag agg ctc atc ccg gag agg acg gtg tgg aag   605
Tyr Phe Lys Lys Gln Lys Arg Leu Ile Pro Glu Arg Thr Val Trp Lys
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tac ttc gtg cag ctg tgc agc gcg ctg gag ttc ctg cac tcg cgc ttc   653
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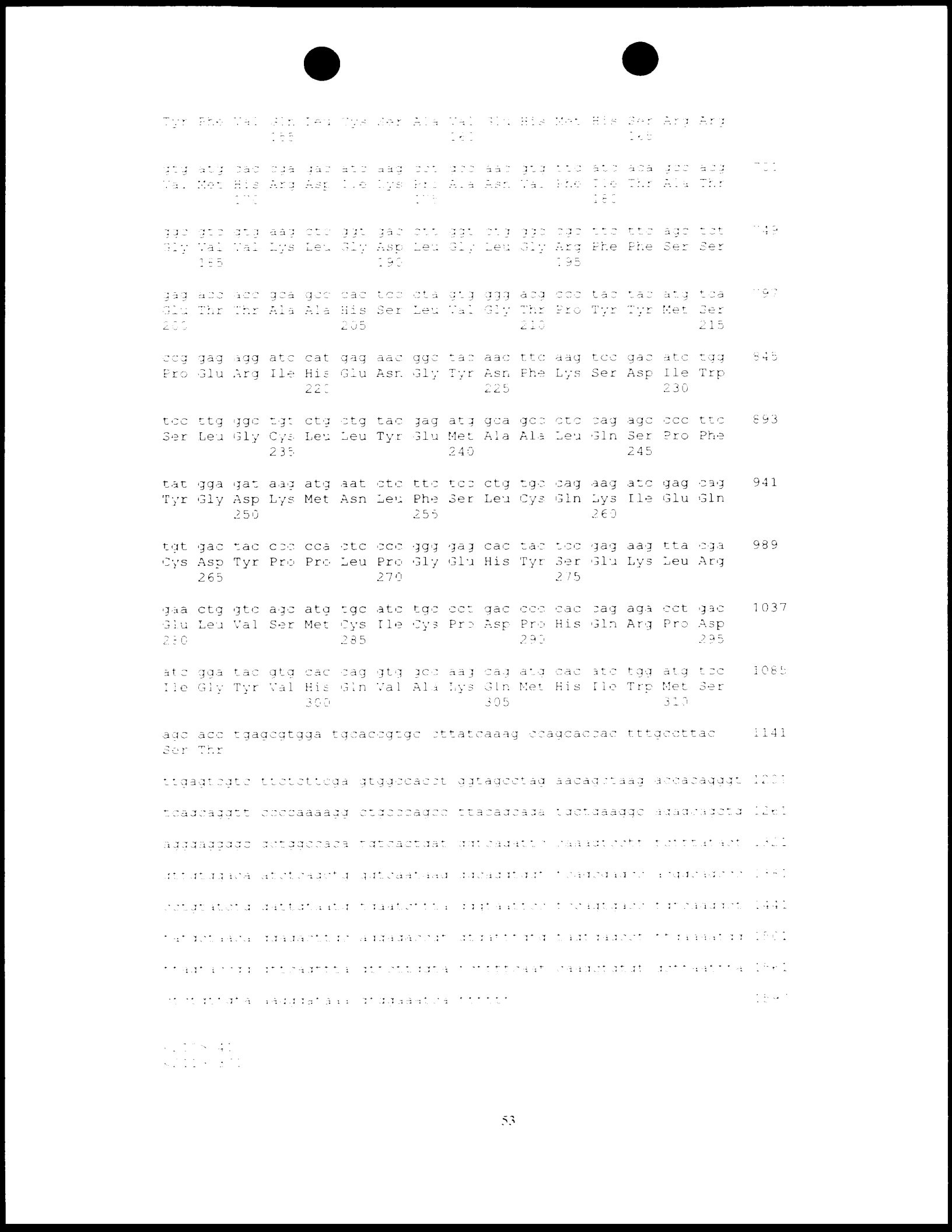

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35 40 45
Pro Ser Pro Tyr Gly Gln Pro Gly Tyr Pro His Gly Pro Ser Pro Tyr
50 55 60
Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro
65 70 75 80
Gln Gly Pro Tyr Pro Gln Glu Gly Tyr Pro Gln Gly Pro Tyr Pro Gln
85 90 95
Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Ser Pro Phe Pro Pro Asn
100 105 110
Pro Tyr Gly Gln Pro Gln Val Phe Pro Gly Gln Asp Pro Asp Ser Pro
115 120 125
Gln His Gly Asn Tyr Gln Glu Glu Gly Pro Pro Ser Tyr Tyr Asp Asn
130 135 140
Gln Asp Phe Pro Ala Thr Asn Trp Asp Asp Lys Ser Ile Arg Gln Ala
145 150 155 160
Phe Ile Arg Lys Val Phe Leu Val Leu Thr Leu Gln Leu Ser Val Thr
165 170 175
Leu Ser Thr Val Ser Val Phe Thr Phe Val Ala Glu Val Lys Gly Phe
180 185 190
Val Arg Glu Asn Val Trp Thr Tyr Tyr Val Ser Tyr Ala Val Phe Phe
195 200 205
Ile Ser Leu Ile Val Leu Ser Xaa Cys Gly Asp Phe Arg Arg Lys His
210 215 220
Pro Trp Asn Leu Val Ala Leu Ser Val Leu Thr Ala Xaa Leu Ser Tyr
225 230 235 240
Met Val Gly Met Ile Ala Ser Phe Tyr Asn Thr Gln Ala Val Ile Met
245 250 255
Ala Val Gly Ile Thr Thr Ala Val Xaa Phe Thr Val Val Ile Phe Ser
260 265 270
Met His Thr Arg Tyr Asp Phe Thr Ser Xaa Xaa Met Gly Val Leu Leu Val
275 280 285
Ser Met Val Leu Leu Phe Ile Phe Ala Ile Leu Xaa Ile Phe Ile Arg
290 295 300

Asn Arg Ile Leu Glu Ile Val Tyr Ala Phe Leu Gly Ala Leu Leu Phe
370 375 380 385 390 395

Thr Lys Phe Leu Ala Val Asp Thr Gln Leu Leu Leu Gly Asn Lys Gln
400 405 410 415 420

Leu Ser Leu Ser Pro Glu Glu Tyr Val Phe Ala Ala Leu Asn Leu Tyr
425 430 435 440 445

Thr Asp Ile Ile Asn Ile Phe Leu Tyr Ile Leu Thr Ile Ile Gly Arg
450 455 460 465 470

Ala Lys Glu
475

<210> 42
<211> 1781
<212> DNA
<213> Homo sapiens

<220>
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<222> (91)..(1203)

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Met Ser His Glu Lys Ser Phe Leu
1 5

gtg tct ggg gac aac tat cct ccc ccc aac cct gga tat ccg ggg ggg 162
Val Ser Gly Asp Asn Tyr Pro Pro Pro Asn Pro Gly Tyr Pro Gly Gly
10 15 20

ccc cag cca ccc atg ccc ccc tat gct cag cct ccc tac cct ggg gcc 210
Pro Gln Pro Pro Met Pro Pro Tyr Ala Gln Pro Pro Tyr Pro Gly Ala
25 30 35 40

cct tac cca cag ccc cct ttc cag ccc tcc ccc tat ggt cag cca ggg 258
Pro Tyr Pro Gln Pro Pro Phe Gln Pro Ser Pro Tyr Gly Gln Pro Gly
45 50 55

tac ccc cat ggc ccc agc ccg tac ccc cag ggt ggc tac cca cag ggt 306
Tyr Pro His Gly Pro Ser Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly
60 65 70

ccc tac ccc cag ggt ggc tac ccg cag ggc ccc tac ccc cag ggt ggc 354
Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly
75 80 85

tac ccc cag ccc tac ccc cag ggc ccc tac ccc cag ggc ccc tac ccc 402
Tyr Pro Gln Pro Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Pro Tyr Pro
90 95 100 105

ccc tac gtc aag ccc ggc gcc aag aag ccc gcc ccc gag gac ctg aag 450
Pro Tyr Val Lys Pro Gly Ala Lys Lys Pro Ala Pro Glu Asp Leu Lys
110 115 120

ccc gag gac ctc aag ccc gag gag ctc aag ccc gtg gag ccc aag gac 498
Pro Glu Asp Leu Lys Pro Glu Glu Leu Lys Pro Val Glu Pro Lys Asp
125 130 135

ctc ttc aac gac ctg gag ctc gtg gcc gcc ggc agc tcc aag ttc ctg 546
Leu Phe Asn Asp Leu Glu Leu Val Ala Ala Gly Ser Ser Lys Phe Leu
140 145 150

cgc gcc cag gag gcc ggc ttc ccc gtg acc gac gcc gcc ctg gcc tgg 594
Arg Ala Gln Glu Ala Gly Phe Pro Val Thr Asp Ala Ala Leu Ala Trp
155 160 165

cag ttc acc atg ctg acc gag ttc gcc aac tgc tgg ctg cag cag aac 642
Gln Phe Thr Met Leu Thr Glu Phe Ala Asn Cys Trp Leu Gln Gln Asn
170 175 180 185

cgc cac gcc aag gag gtg gtg gtg ctg ctg ccc ctg gag aag cag ctg 690
Arg His Ala Lys Glu Val Val Val Leu Leu Pro Leu Glu Lys Gln Leu
190 195 200

gcc gcc gtg gac cag gtg gcc gtg cag cag ctg gcc ggc ctg gag ctg 738
Ala Ala Val Asp Gln Val Ala Val Gln Gln Leu Ala Gly Leu Glu Leu
205 210 215

acc ggc cac ttc gac ccc ctg atc cgc gcc aac ctg gtg ctg agc ccc 786
Thr Gly His Phe Asp Pro Leu Ile Arg Ala Asn Leu Val Leu Ser Pro
220 225 230

ctg gtg ctg gcc gtg ctg ctg ggc ctg ctg ctg ctg ctg gtg gtg ctg 834
Leu Val Leu Ala Val Leu Leu Gly Leu Leu Leu Leu Leu Val Val Leu
235 240 245

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 882
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
250 255 260 265

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 930
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
270 275 280

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 978
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
285 290 295

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 1026
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
300 305 310

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 1074
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
315 320 325

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 1122
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
330 335 340 345

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg 1170
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
350 355 360

ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg ctg tgaccgcgcc gcgcgcgcgc 1223
Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
365 370

gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc 1283

gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc gcgcgcgcgc 1343

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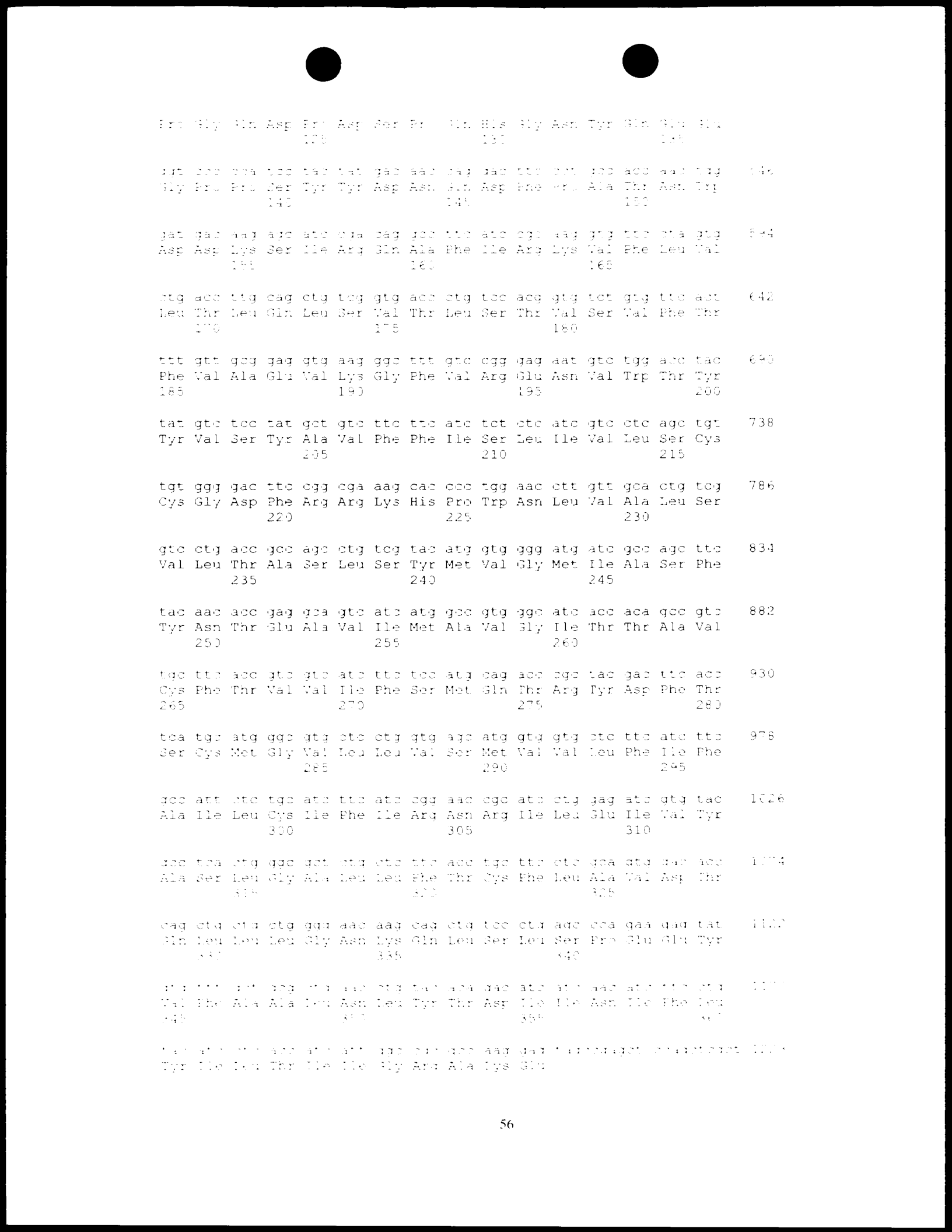
gcgcgcgcgc gcgcgcgcgc 1781



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ctcctgtatg tacactgcag atacttccat ttggaccagc tgtggccaca gcatggccac 1403

tttagtcctc ccgccccccc caaggggcag caaggccacg tttccgtgcc acctcctgtc 1463

tactcattgt tgcatgagcc ctgtctgcca gcccaccccc gggactgggg gcagcaccag 1523

gtcccgggga gagggattga gccaagaggt gagggtgcac gtcttcccct ctgtcccagc 1583

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tggggacatg cggagtgggg gtcttatccc tgtgctgagc cctgagggca gagaggatgg 1703

catgtttcag gggaggggga agccttcctc tcaatttgtt gtcagtgaaa ttccaataaa 1763

tgggatttgc tctctgcc                                              1781
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<210> 43
<211> 393
<212> PRT
<213> Homo sapiens

<400> 43

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Ser Ser Pro Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro
             20                  25                  30

Ala Ala Ser Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu
         35                  40                  45

Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
     50                  55                  60

Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
 65                  70                  75                  80

Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
                 85                  90                  95

Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
            100                 105                 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg
        115                 120                 125

Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln
    130                 135                 140

Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala
145                 150                 155                 160

Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala
                165                 170                 175
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Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val
1 5 10 15

Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu
20 25 30

Lys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser
35 40 45

Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr
50 55 60

His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly
65 70 75 80

Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly
85 90 95

Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala
100 105 110

Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr
115 120 125

Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn
130 135 140

Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu
145 150 155 160

Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly
165 170 175

His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala
180 185 190

Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu
195 200 205

Leu Val Pro Gly Pro Glu Lys Glu Asn
210 215

<210> 44
<211> 2396
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (80)...(1228)

<400> 44
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5 10 15

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Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu
             55                  60                  65

Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg
         70                  75                  80

Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu
     85                  90                  95

Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu
100                 105                 110                 115

Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
            120                 125                 130

Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
        135                 140                 145

Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
    150                 155                 160

Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe
165                 170                 175

Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val
            180                 185                 190

Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His
        195                 200                 205

Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Cys Arg Thr
    210                 215                 220

Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu
225                 230                 235                 240

Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr His Thr Thr
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Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile
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Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly Tyr Asn Leu
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ctg aaa ccc atg ggc aaa gtc gtc acc tat gga atg gcc aac ctg ctg      522
Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala Asn Leu Leu
                280                 285                 290

acg ggc ccc aaa cgg aac ctg atg gcc ctg gcc cgg aca tgg tgg aat      570
Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr Trp Trp Asn
            295                 300                 305

cag ttc agc gtg acc gct ctg cag ctg ctg cag gcc aac cgg gct gtg      1018
Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn Arg Ala Val
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tgt ggc ttc cac ctg ggc tac ctg gat ggt gag gtg gag ctg gtc agt      1066
Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu Leu Val Ser
    325                 330                 335

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Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly His Ile Lys
340                 345                 350                 355

ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg      1162
Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met
                360                 365                 370

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Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu Leu Val Pro
            375                 380                 385

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Gly Pro Glu Lys Glu Asn
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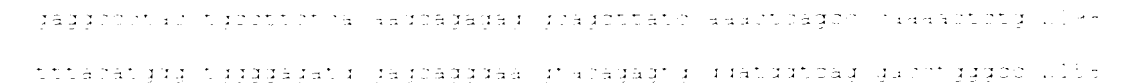

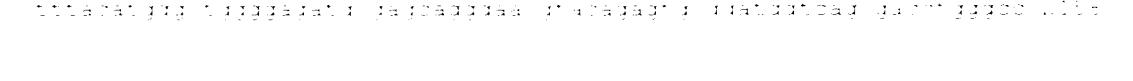

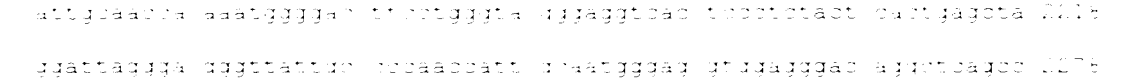

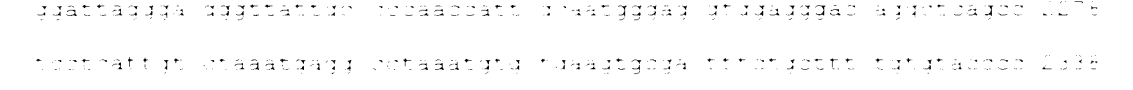

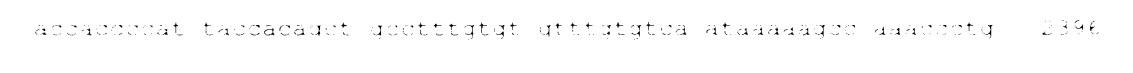

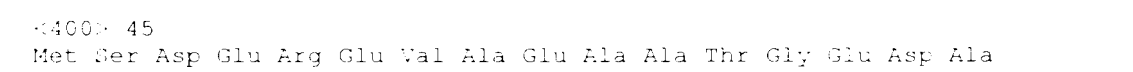

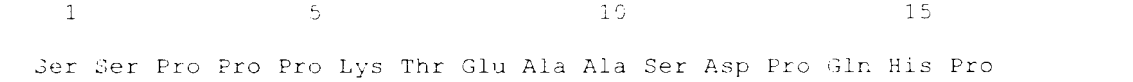

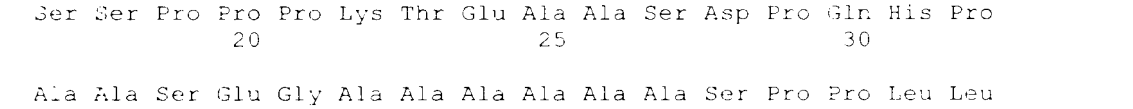

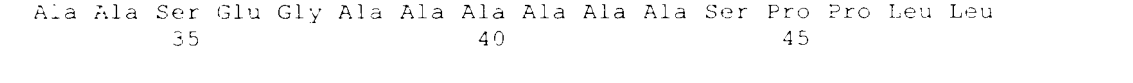

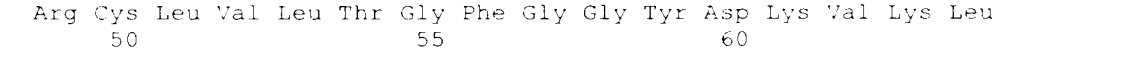

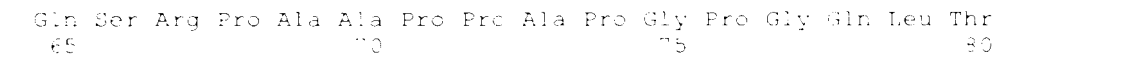

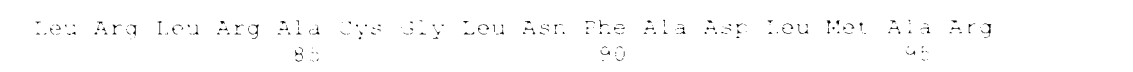

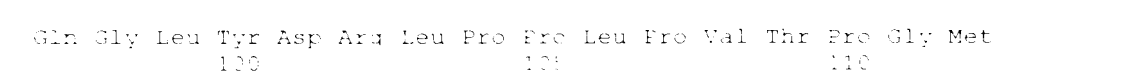

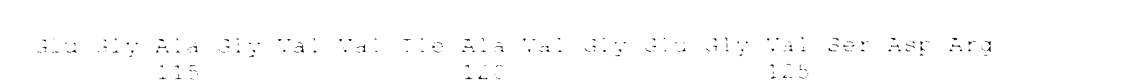

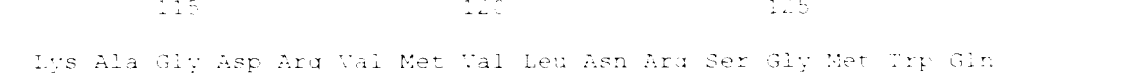

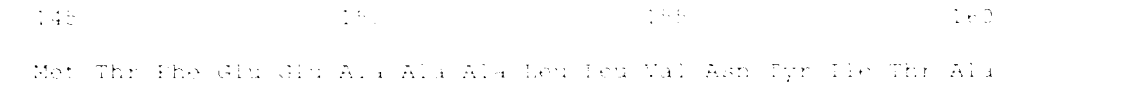

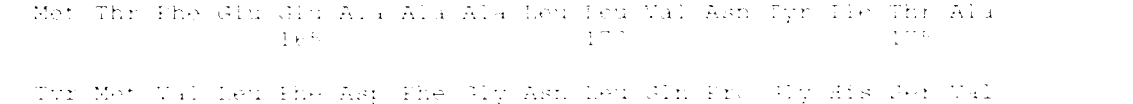

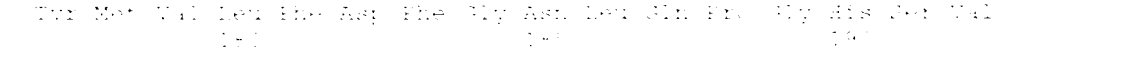

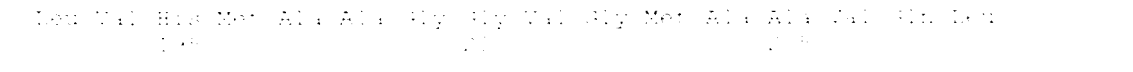

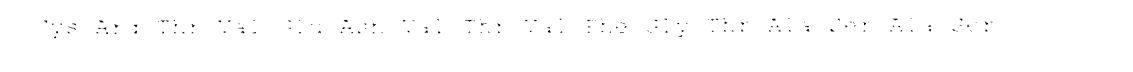

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Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
50 55 60

Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
65 70 75 80

Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
85 90 95

Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
100 105 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg
115 120 125

Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln
130 135 140

Ser Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala
145 150 155 160

Met Thr Phe Glu Gln Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala
165 170 175

Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val
180 185 190

Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu
195 200 205

Lys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser

Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr
His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly
Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly
Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala
Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr
Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn
Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu
Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly
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Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
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Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
100 105 110

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Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
115 120 125

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Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe
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Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val
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Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His
165 170 175

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Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Cys Arg Thr
180 185 190

gtg gag aat gtg aca gtg ttc gga acg gcc tcg gcc agc aag cac gag
Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu
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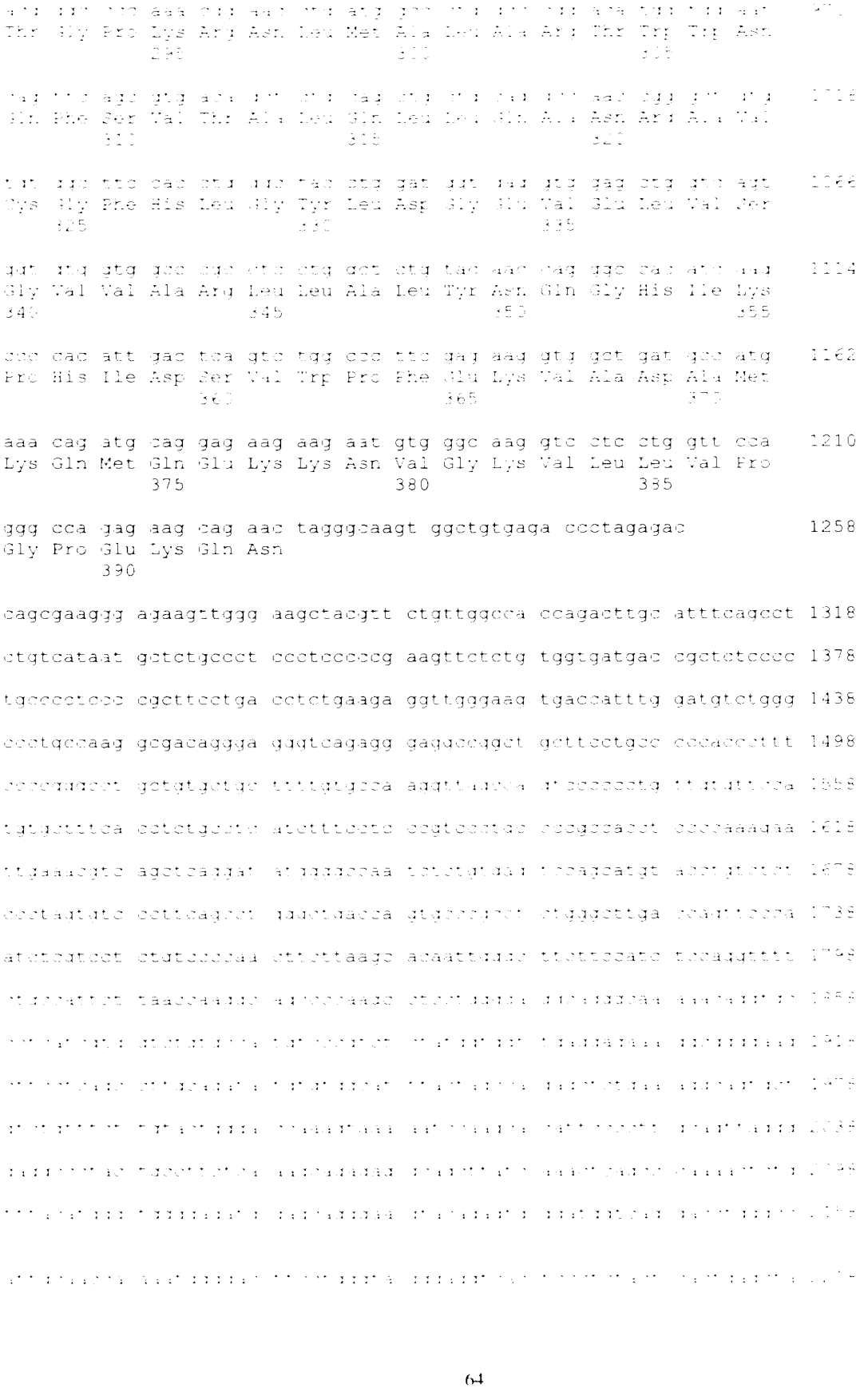

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Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe
35 40 45

Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys
50 55 60

Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile
65 70 75 80

Gly Trp Pro Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu
85 90 95

Leu Phe Arg Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val
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Asp Lys Val Gly Glu Ser Asn Asn Met Val
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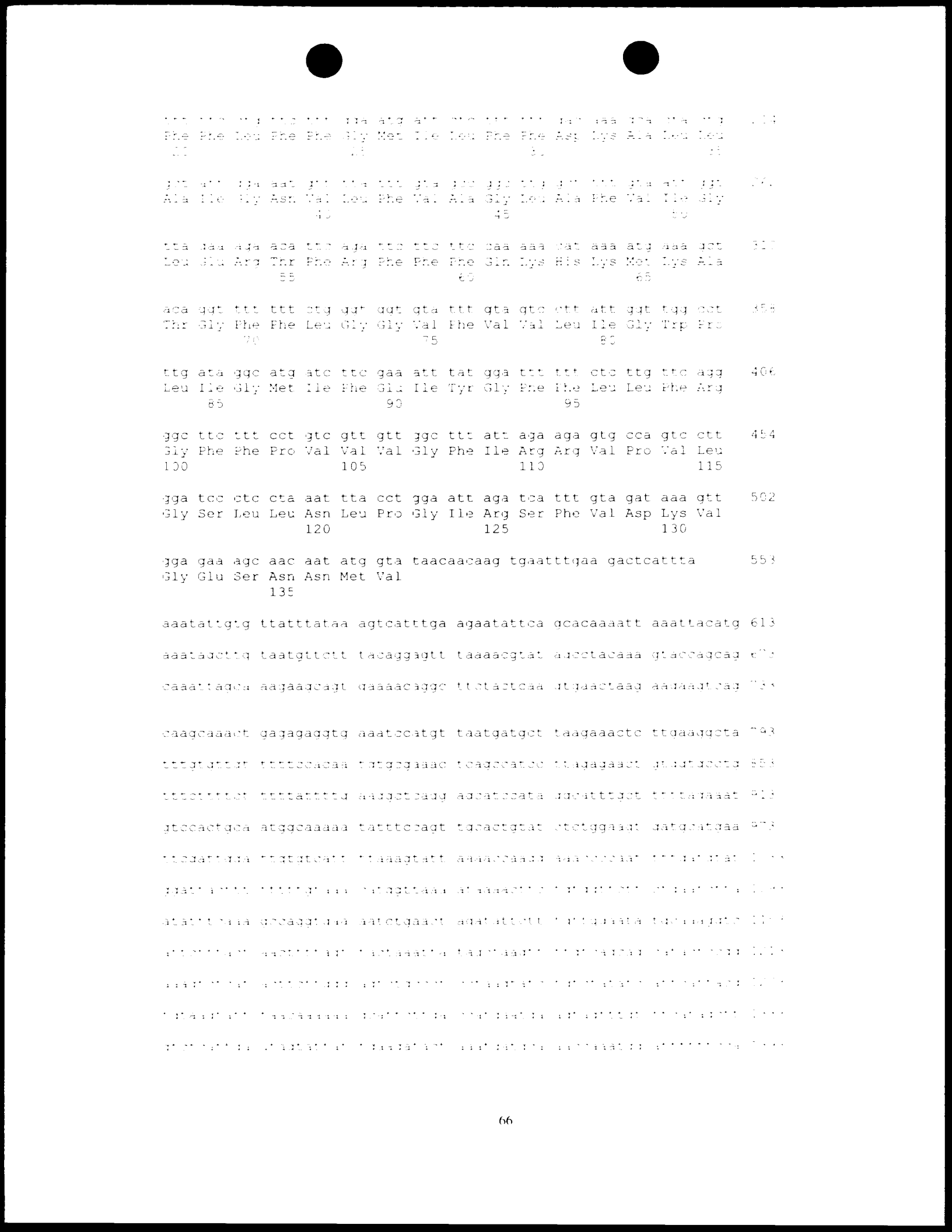

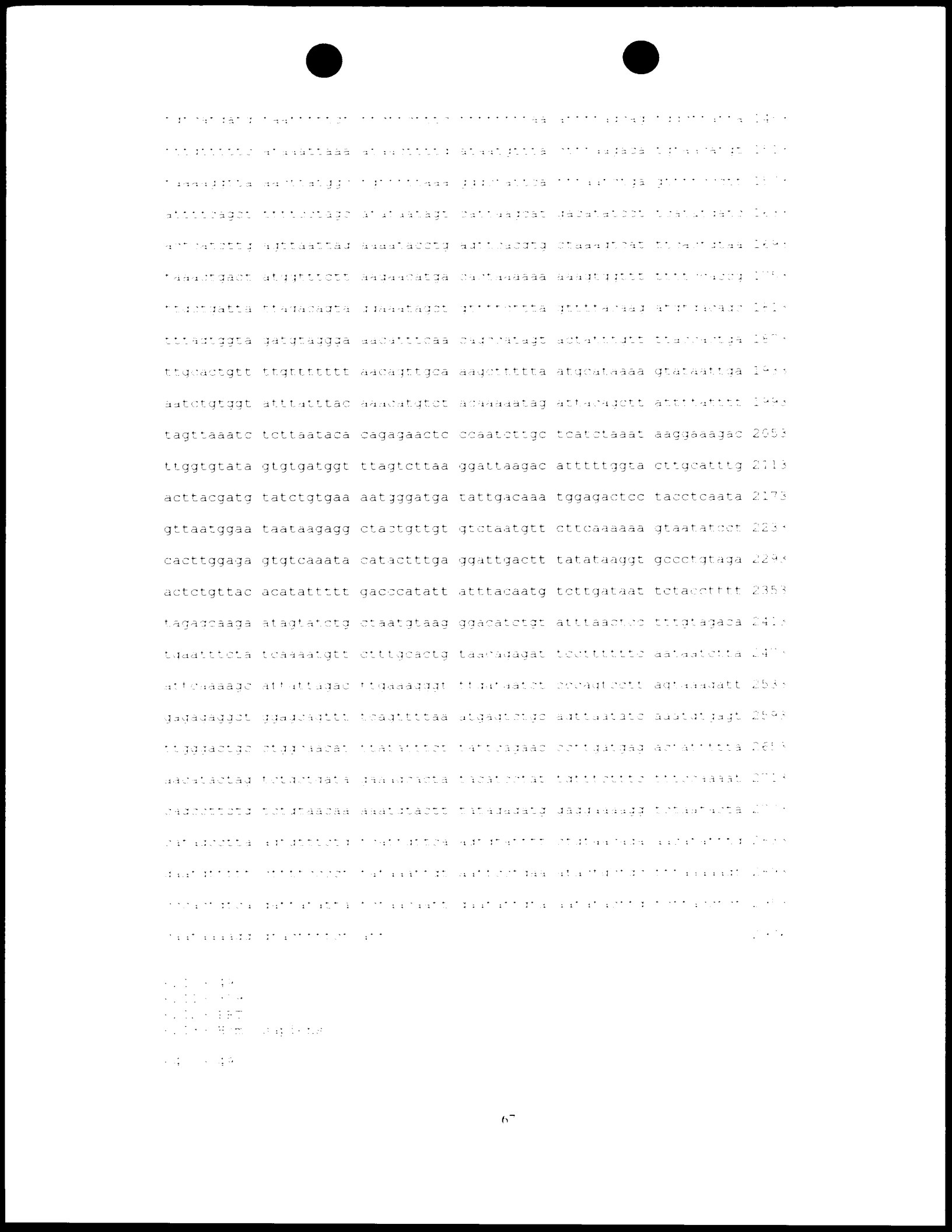

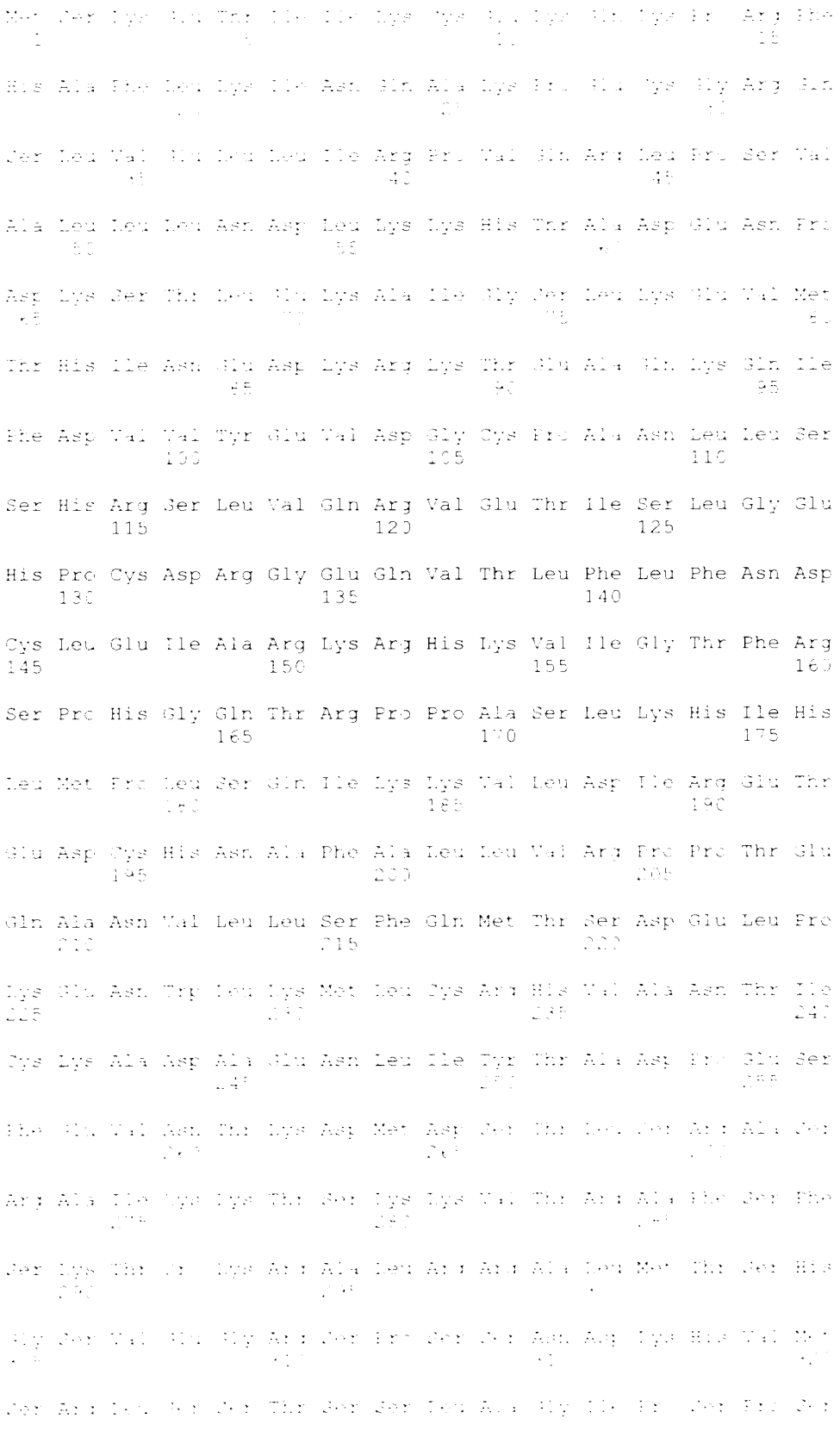

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1 5

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Glu Lys Gln Lys Pro Arg Phe His Ala Phe Leu Lys Ile Asn Gln Ala
10 15 20 25

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Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu Leu Leu Ile Arg Pro
30 35 40

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Val Gln Arg Leu Pro Ser Val Ala Leu Leu Leu Asn Asp Leu Lys Lys
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<212> PRT
<213> Homo sapiens

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20 25 30

Asn Leu Leu Ile Gly Ser Thr Ser Tyr Val Glu Glu Ala Met Glu Glu
35 40 45

Ile Gly Thr Arg Val Ile Leu Val Phe Ala Gly Lys Glu Glu Glu
50 55 60

Leu Thr Lys Ala Leu Lys Asp Ile Lys Val Gly Phe Val Lys Met Glu
65 70 75 80

Ser Val Glu Glu Phe Glu Gly Leu Asp Ser Pro Glu Phe Glu Asn Val
85 90 95

Phe Val Val Thr Asp Phe Gln Asp Ser Val Phe Asn Asp Leu Tyr Lys
100 105 110

Ala Asp Cys Arg Val Ile Gly Pro Pro Val Val Leu Asn Cys Ser Gln
115 120 125

Lys Gly Glu Pro Leu Pro Phe Ser Cys Arg Pro Leu Tyr Cys Thr Ser
130 135 140

Met Met Asn Leu Val Leu Cys Phe Thr Gly Phe Arg Lys Lys Glu Glu
145 150 155 160

Leu Val Arg Leu Val Thr Leu Val His His Met Gly Gly Val Ile Arg
165 170 175

Lys Asp Phe Asn Ser Lys Val Thr His Leu Val Ala Asn Cys Thr Gln
180 185 190

Gly Glu Lys Phe Arg Val Ala Val Ser Leu Gly Thr Pro Ile Met Lys
195 200 205

Pro Glu Trp Ile Tyr Lys Ala Trp Glu Arg Arg Asn Glu Gln Asp Phe
210 215 220

Tyr Ala Ala Val Asp Asp Phe Arg Asn Glu Phe Lys Val Pro Pro Phe
225 230 235 240

Gln Asp Cys Ile Phe Ser Phe Leu Gly Phe Ser Asp Glu Glu Lys Thr
245 250 255

Asn Met Glu Glu Met Thr Glu Met Gln Gly Gly Lys Tyr Leu Pro Leu
260 265 270

Gly Asp Glu Arg Cys Thr His Leu Val Val Glu Glu Asn Ile Val Lys
275 280 285

Asp Leu Pro Phe Glu Pro Ser Lys Lys Leu Tyr Val Val Lys Gln Glu
290 295 300

Trp Phe Trp Gly Ser Ile Gln Met Asp Ala Arg Ala Gly Glu Thr Met
305 310 315 320

Tyr Leu Tyr Glu Lys Ala Asn Thr Pro Glu Leu Lys Lys Ser Val Ser
325 330 335

Met Leu Ser Leu Asn Thr Pro Asn Ser Asn Arg Lys Arg Arg Leu
340 345 350

Lys Thr Thr Leu Ala Gln Leu Ser Arg Asp Thr Asp Val Ser Pro Phe
355 360 365

Ile Ile Arg Lys Arg Ile Ser Ala Glu His Ser Leu Ser Ile Gly Ser
370 375 380

Leu Leu Asp Ile Ser Asn Thr Pro Glu Ser Ser Ile Asn Tyr Gly Asp
385 390 395 400

Asn Ala Pro Ala Leu Leu Val Arg Pro Ile Thr His His Ala Asn Val
Leu Leu Ser Phe His Met Thr Ser Arg Ala Leu Pro Lys Glu Asn Trp
Leu Lys Met Leu Lys Arg His Val Ala Asn Thr Ile Lys Lys Ala Asp
Ala Glu Asn Leu Thr Tyr Thr Ala Asp Pro His Ser Phe Glu Val Asn
Thr Lys Asp Met Asp Ser Thr Leu Ser Arg Ala Ser Arg Ala Ile Lys
Lys Thr Ser Lys Lys Val Thr Arg Ala Phe Ser Phe Ser Lys Thr Pro
Lys Arg Ala Leu Arg Arg Ala Leu Met Thr Ser His Gly Ser Val Glu
Gly Arg Ser Pro Ser Ser Asn Asp Lys His Val Met Ser Arg Leu Ser
Ser Thr Ser Ser Leu Ala Gly Ile Pro Ser Pro Ser Leu Val Ser Leu
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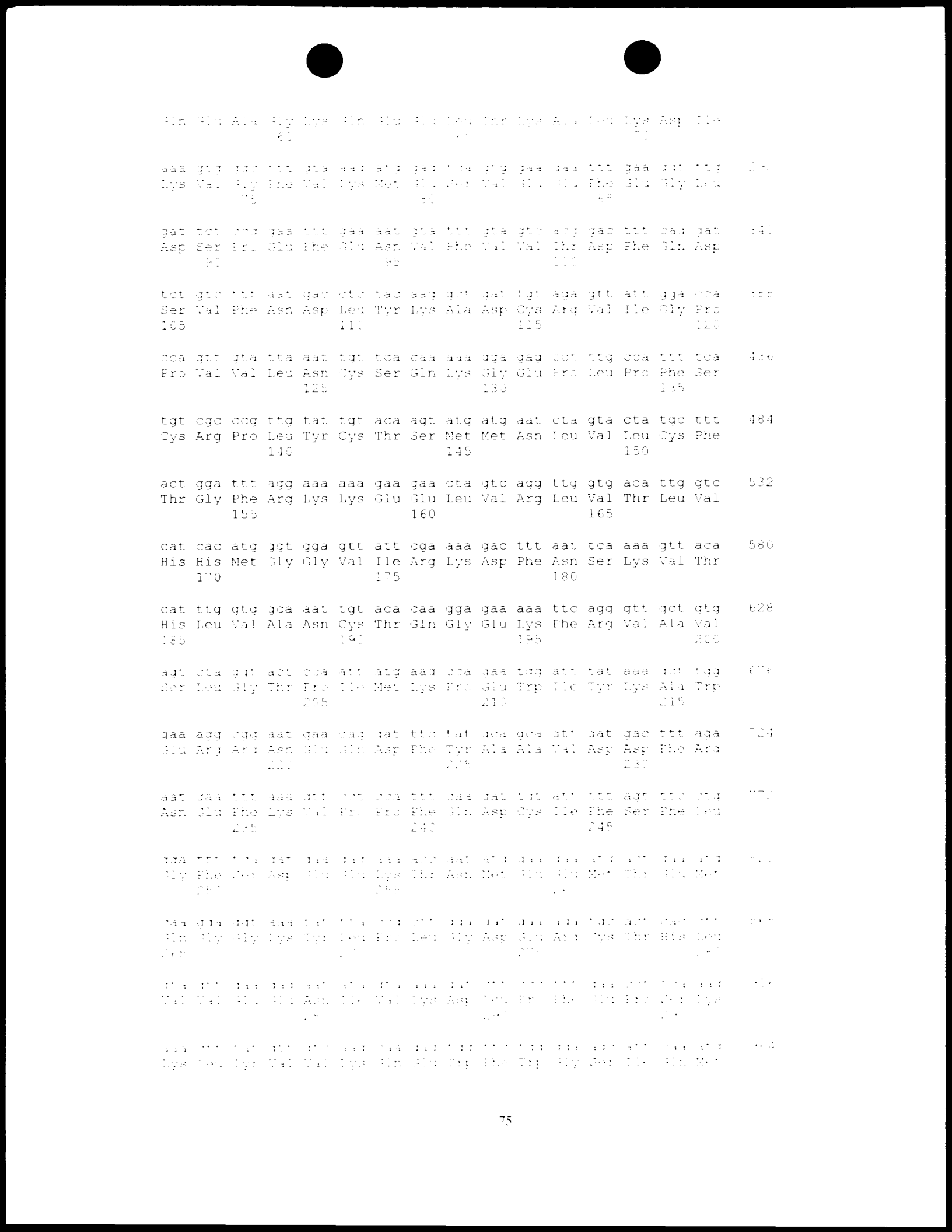
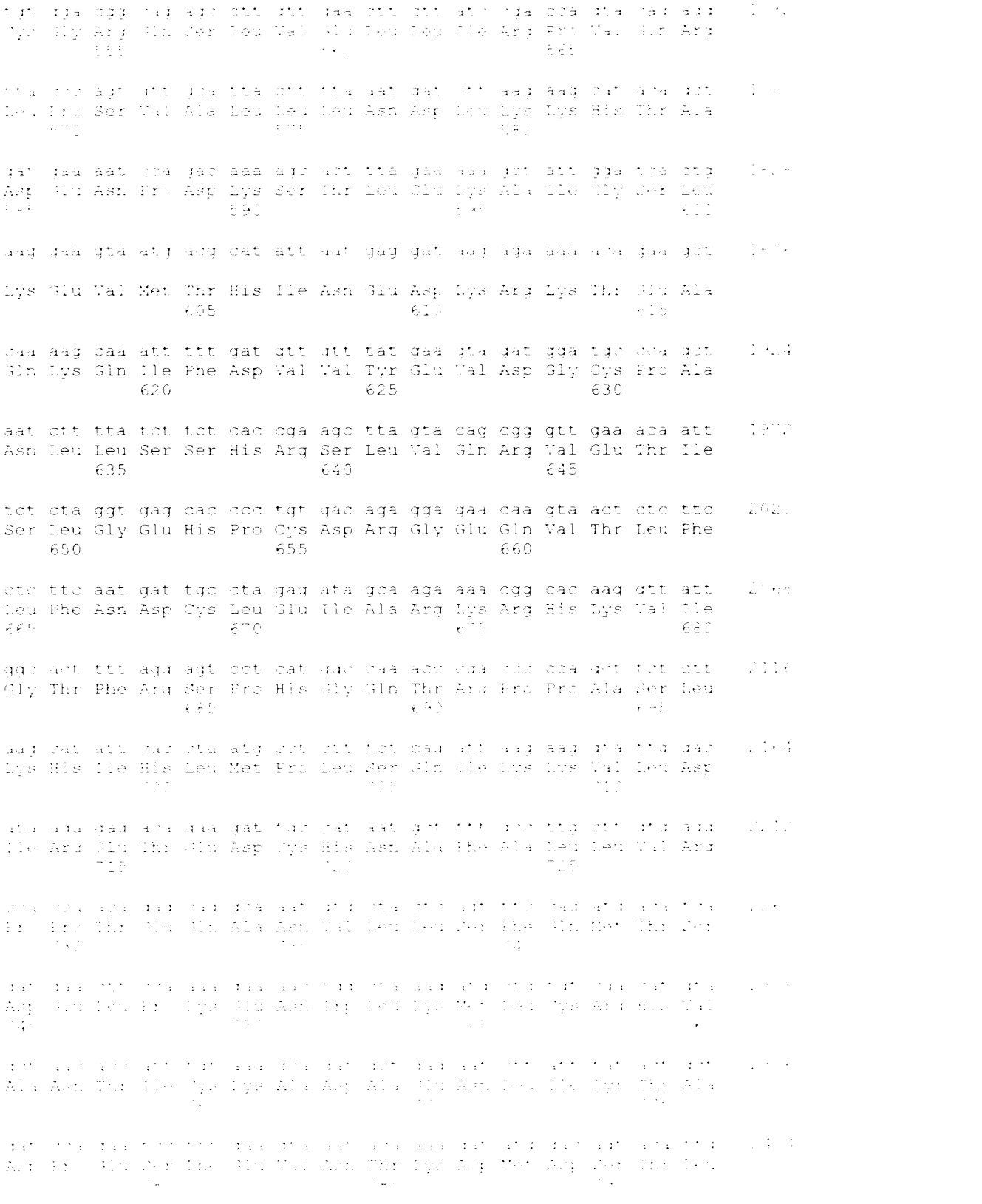
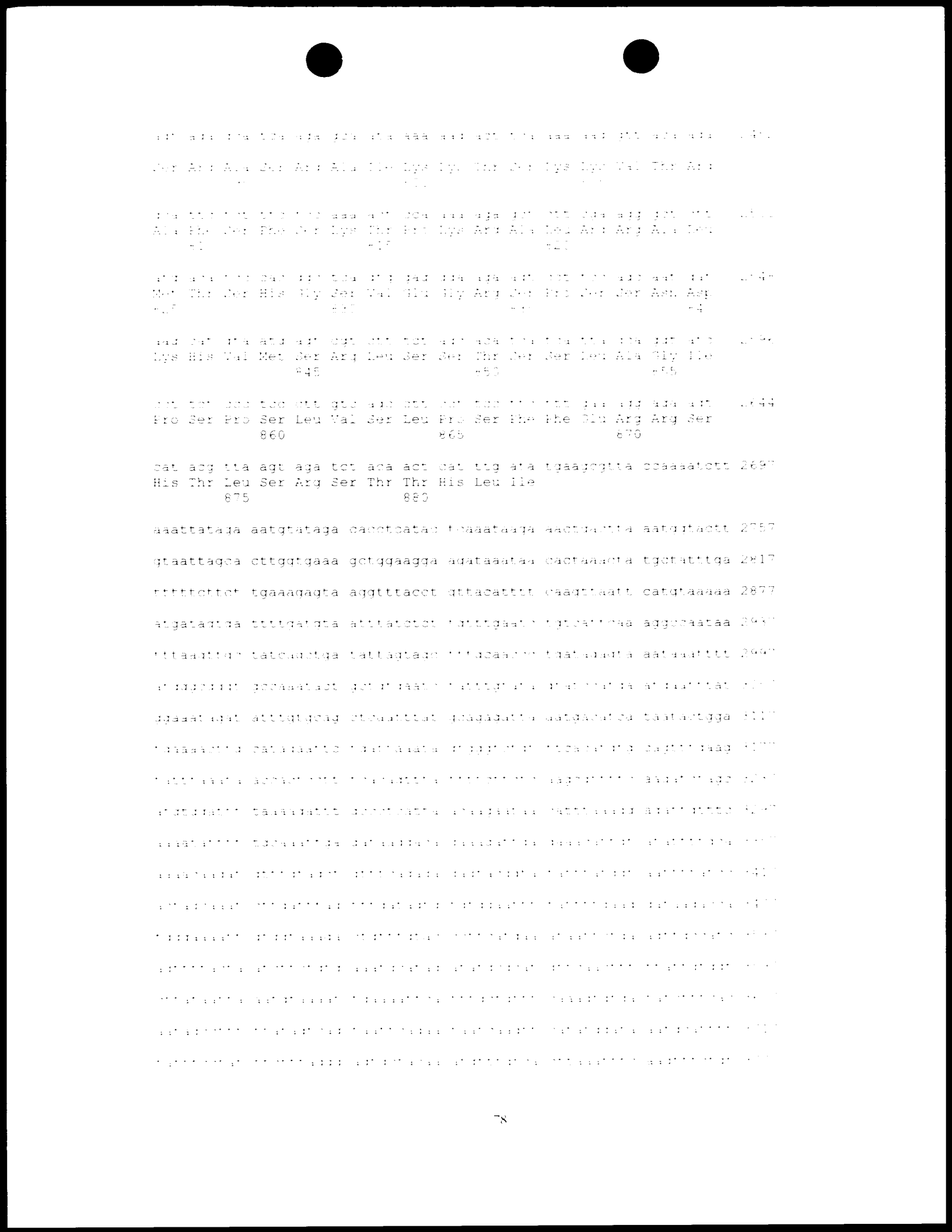
His Leu Ile

<213> Homo sapiens







Asn Leu Gly Ile Met Gln Asn Leu Ala Asp Ile Ile Lys Lys Tyr
Pro Glu

Ile Gly Leu Val Lys Pro Cys Val Val Asp Trp Thr Leu Leu Tyr Thr
Val Ala

Met Val Phe His Pro Ala Arg His Lys Val Leu Arg Ser Val
Ala Ala Ala

<210> 54
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<212> DNA
<213> Homo sapiens

<220>
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Met Glu Gly Pro
1

ggg ctg ggc tcg cag tgc agg aat cac agc cat ggc ccc cac cct cca 163
Gly Leu Gly Ser Gln Cys Arg Asn His Ser His Gly Pro His Pro Pro
5 10 15 20

gga ttt ggt cga tat ggc atc tgt gca cat gaa aac aaa gaa ctt gcc 211
Gly Phe Gly Arg Tyr Gly Ile Cys Ala His Glu Asn Lys Glu Leu Ala
25 30 35

aat gca aga gaa gct ctt cct ctt ata gag gac tct agt aac tgt gat 259
Asn Ala Arg Glu Ala Leu Pro Leu Ile Glu Asp Ser Ser Asn Cys Asp
40 45 50

att gtc aaa gct act caa tat gga att ttt gaa cga tgt aaa gaa ttg 307
Ile Val Lys Ala Thr Gln Tyr Gly Ile Phe Glu Arg Cys Lys Glu Leu
55 60 65

tta gaa gca gga tat gat gtg aga cag cca gat aaa gtt aat gtg tca 355
Val Glu Ala Gly Tyr Asp Val Arg Gln Pro Asp Lys Val Asn Val Ser
70 75 80

[illegible] 403
Leu Leu His Trp Ala Ala Ile Asn Asn Arg Leu Asp Leu Val Lys Phe
85 90 95 100

[illegible] 451
Tyr Ile Ser Lys Gly Ala Val Val Asp Gln Leu Gly Gly Asp Leu Asn
105 110 115

[illegible] 499
Leu Thr Pro Leu His Trp Ala Ile Arg Gln Gly His Leu Pro Met Val
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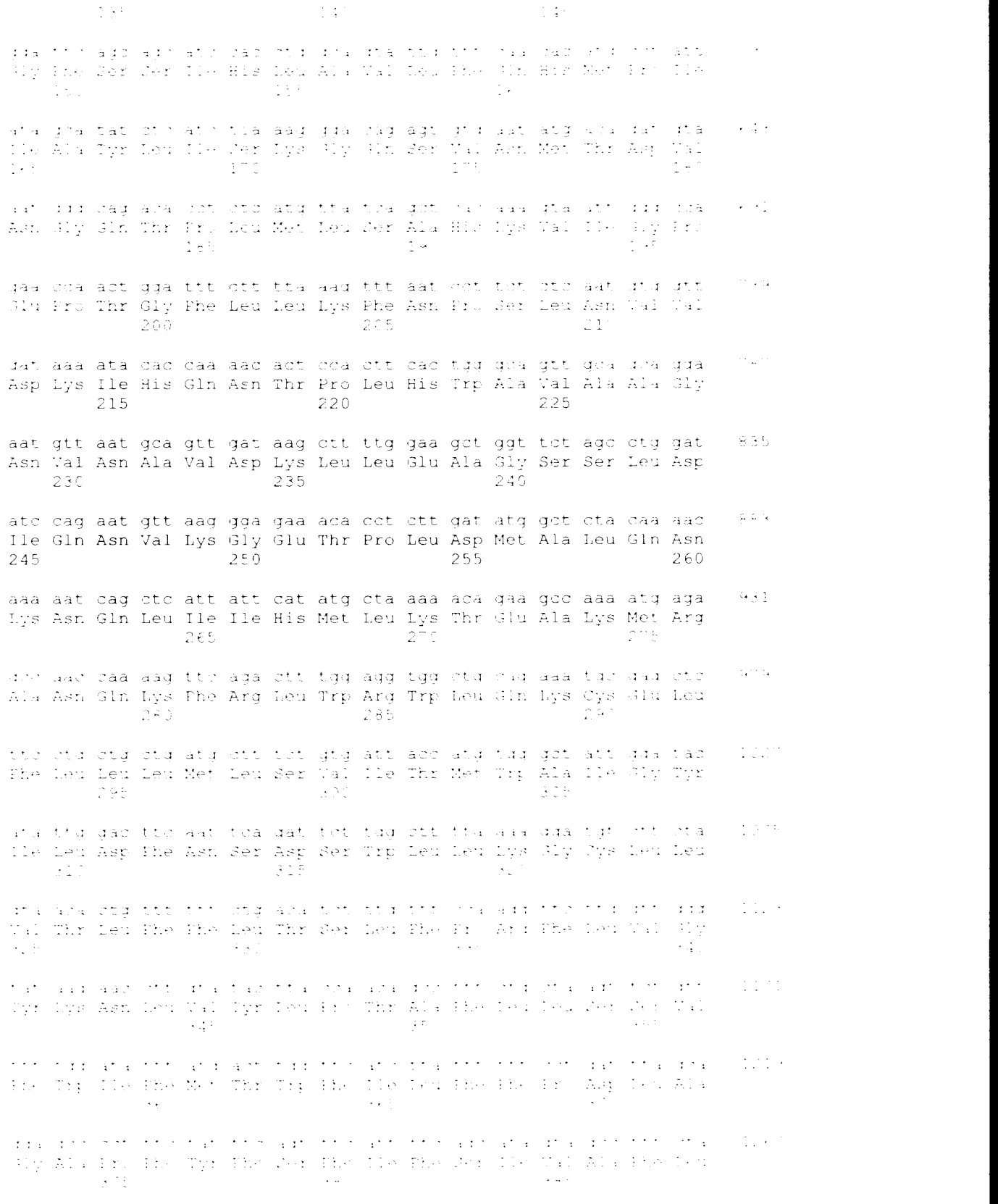
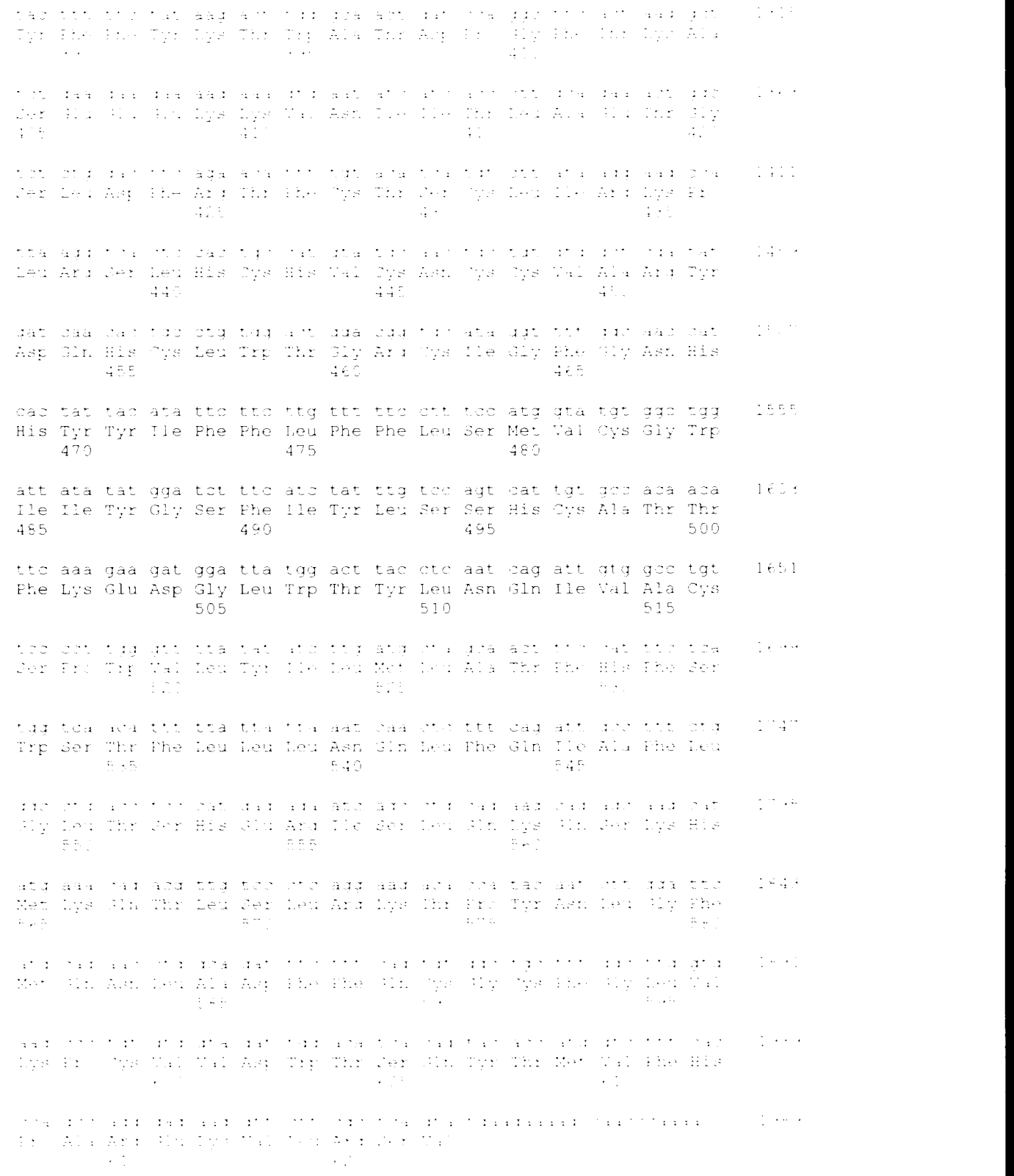
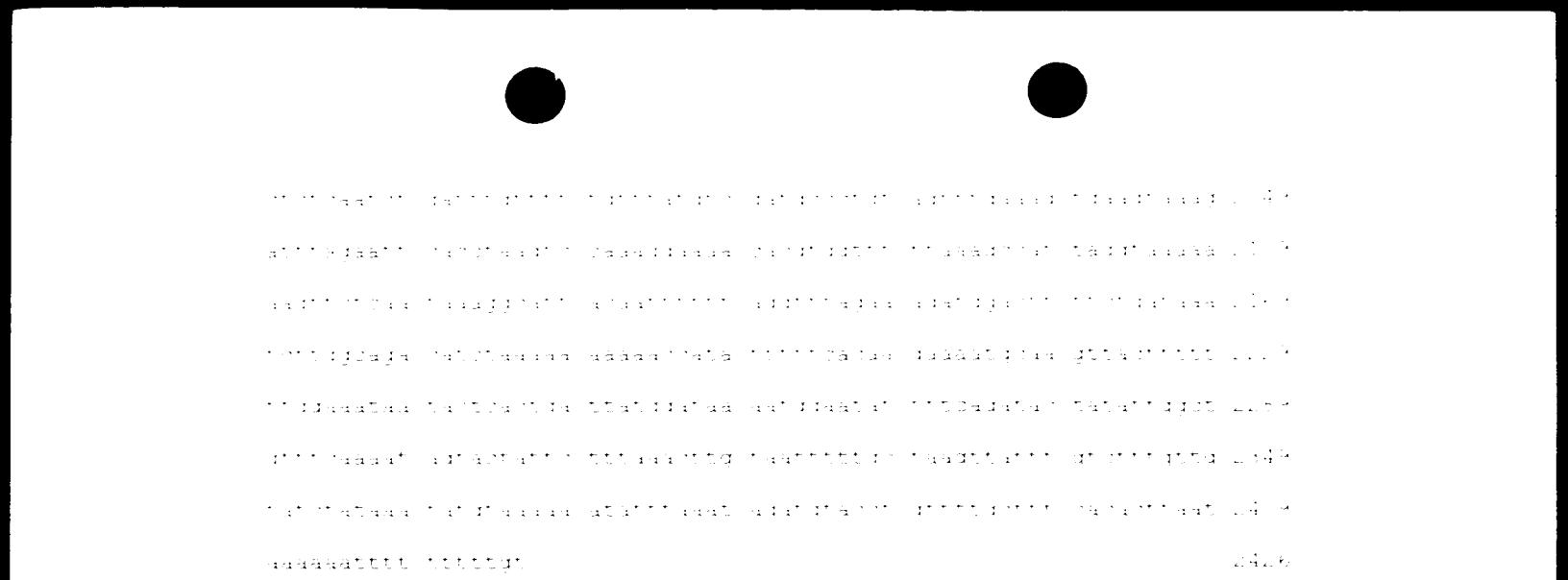
[illegible] 547
Ile Leu Leu Leu Gln His Gly Ala Asp Pro Thr Leu Ile Asp Gly Pro







<210> 55
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<212> PRT
<213> Homo sapiens

<400> 55

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Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly Cys Phe
             20                  25                  30

Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys Pro
         35                  40                  45

Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val Leu
     50                  55                  60

Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala Leu
 65                  70                  75                  80

Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile Gly
                 85                  90                  95

Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser Arg
            100                 105                 110

Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala Gly
        115                 120                 125

Val Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Met Ser Thr Gly
    130                 135                 140

Met Val Phe Leu Gly Ile Tyr Leu Ile Tyr Val Ala Tyr Ser Leu Met
145                 150                 155                 160

His Ser Lys Met Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly Gly
                165                 170                 175

Met Leu Met Ile Gln Leu Phe Val Leu Tyr Gly Ile Leu Ala Leu
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Ala Phe Leu Ser Ser Gly Tyr Tyr Val Thr Leu Ala Ala Met Ile Leu Ala
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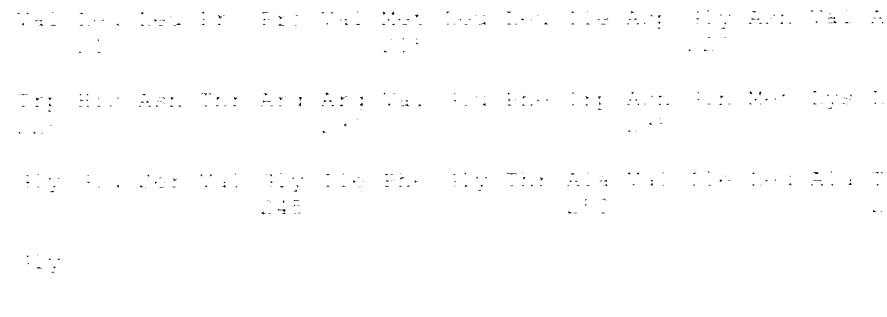

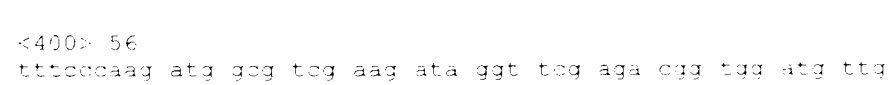

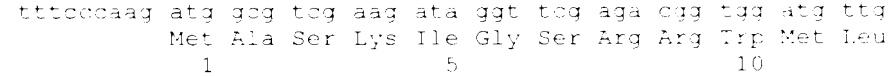

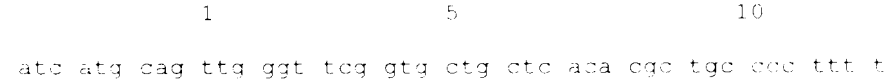

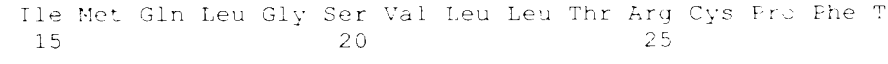

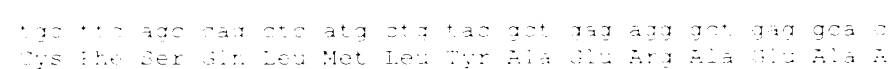

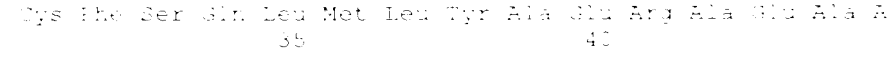

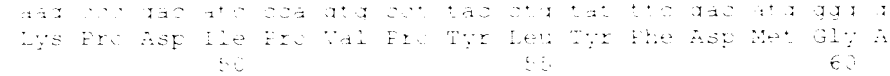

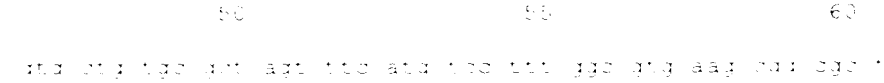

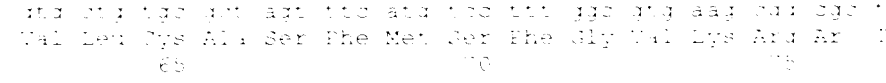

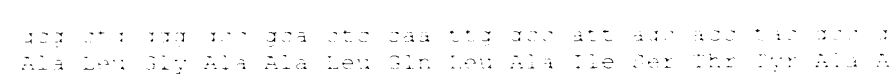

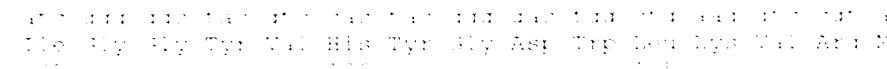

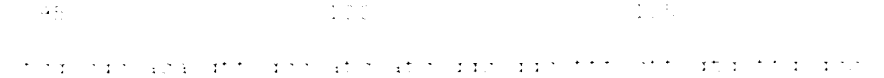

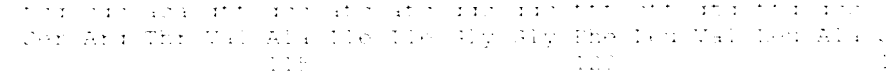

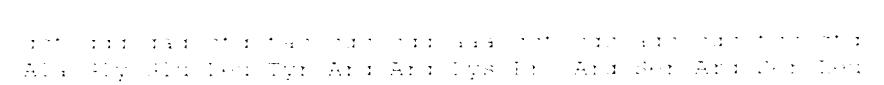

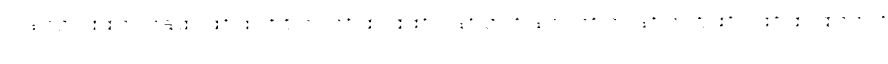

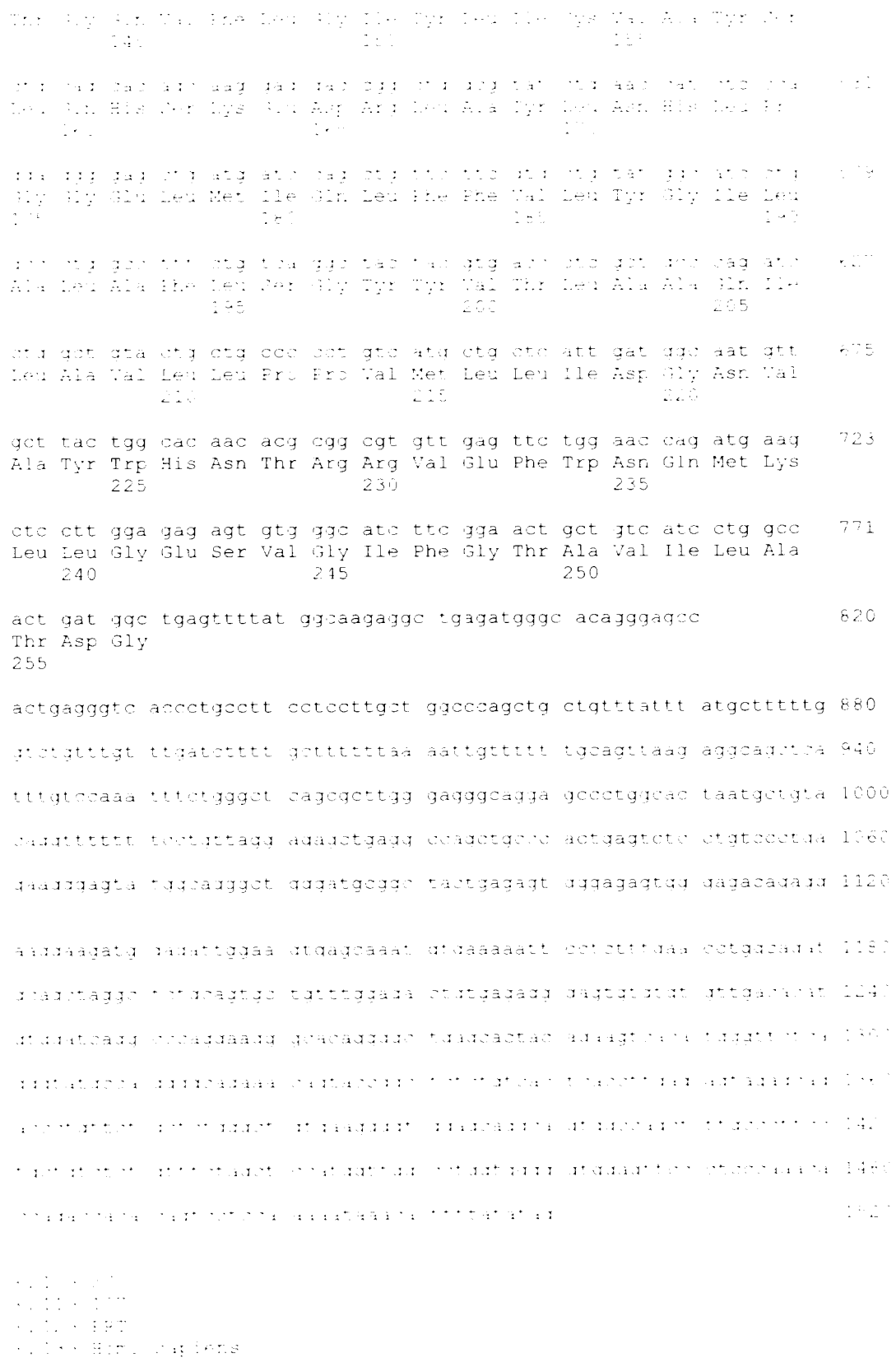

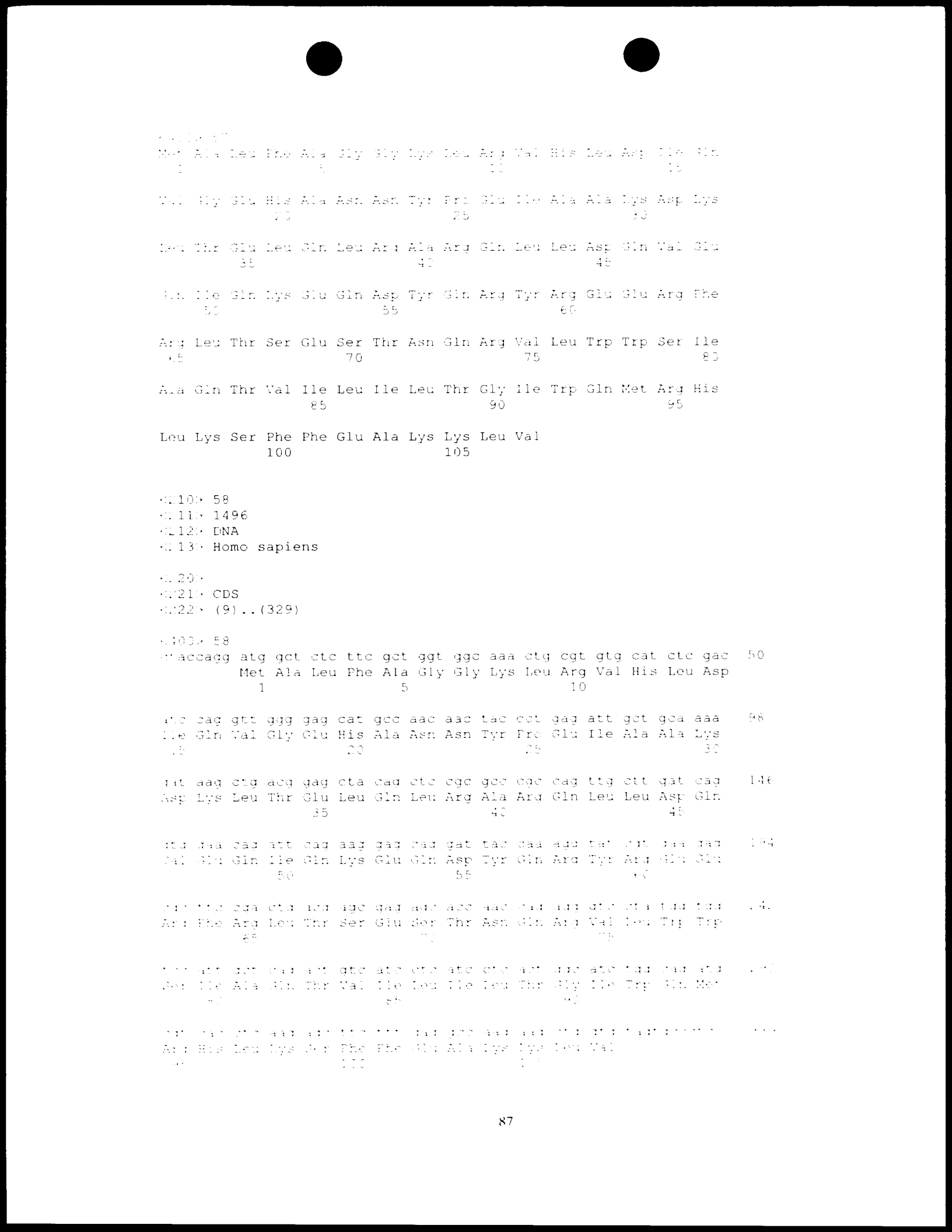

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Val Gly Glu His Ala Asn Asn Tyr Pro Glu Ile Ala Ala Lys Asp Lys
20 25 30

Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln Val Glu
35 40 45

Ile Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu Arg Phe
50 55 60

Arg Leu Thr Ser Glu Ser Thr Asn Gln Arg Val Leu Trp Trp Ser Ile
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Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met Arg His
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Leu Lys Ser Phe Phe Glu Ala Lys Lys Leu Val
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Ile Gln Val Gly Glu His Ala Asn Asn Tyr Pro Glu Ile Ala Ala Lys
15 20 25 30

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Asn Lys Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln
35 40 45

gtt gaa cag att cag aag gag cag gat tac caa agg tat cgt gaa gaa 194
Val Glu Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu
50 55 60

cgt ttc cga ctg acg agc gag agc acc aac cag agg gtc ctg tgg tcc 242
Arg Phe Arg Leu Thr Ser Glu Ser Thr Asn Gln Arg Val Leu Trp Ser
65 70 75

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Ile Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met Arg
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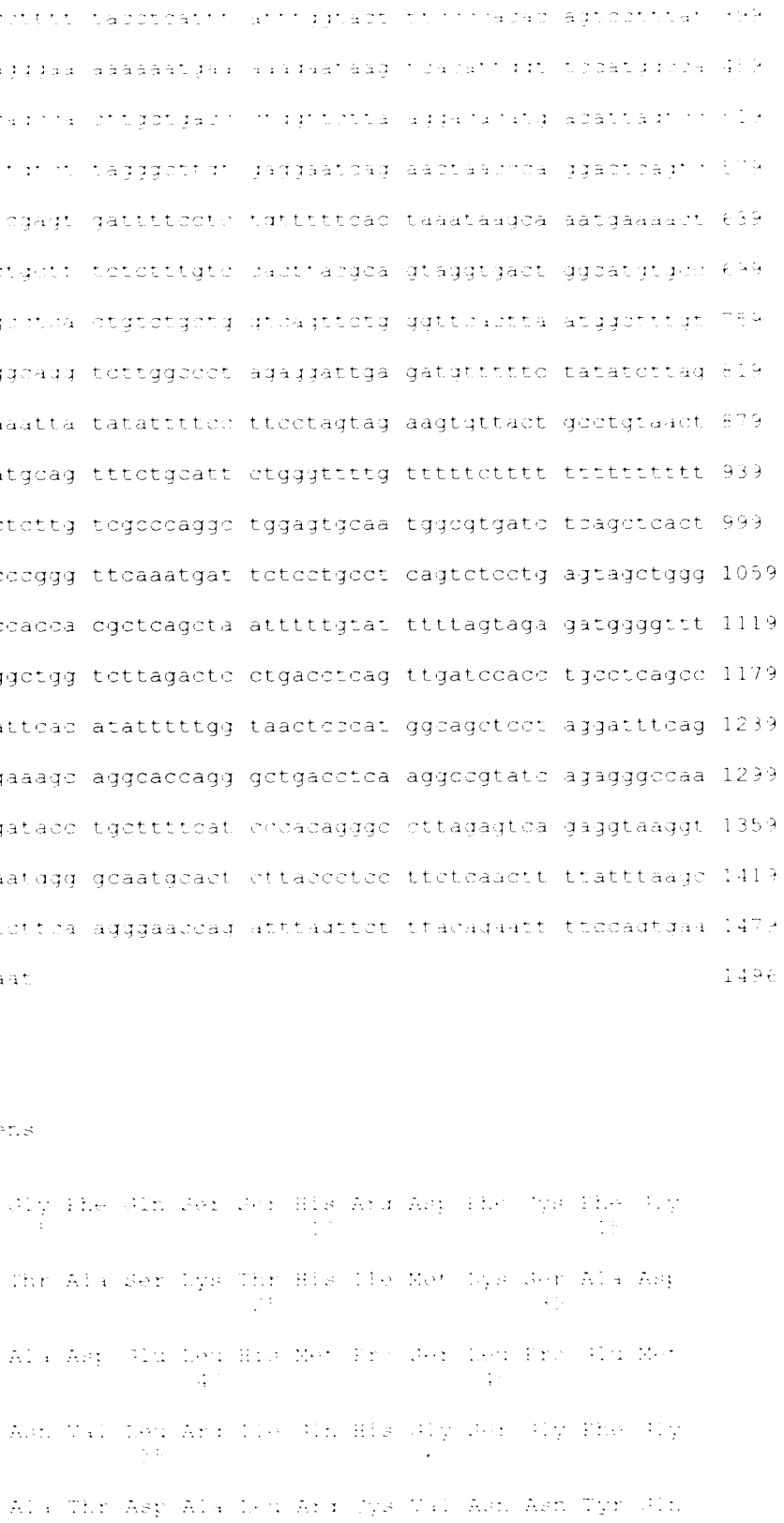

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<212> PRT
<213> Homo sapiens

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20 25 30

Val Phe Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met
35 40 45

Met Pro Gly Asp Asn Val Leu Arg Ile Asn His Gly Ser Gly Phe Gly
50 55 60

Ile Phe Pro Asn Ala Thr Asp Ala Leu Arg Lys Val Asn Asn Tyr His

Gly Met Leu Lys Val Ala Lys Ala His Glu Trp His Glu Asn Arg Thr
85 90 95

Ala Gly Glu His Ser Lys Glu Val Ile Lys Ile Tyr Asp Trp Thr Tyr
100 105 110

Thr Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys
115 120 125

Val Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg
130 135 140

Glu Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu
145 150 155 160

His Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro
165 170 175

Ser Ser Phe Phe Leu Leu Leu Arg Phe Phe Leu Arg Ile Asp Gly Val
180 185 190

Leu Ile Arg Met Asn Asp Thr Arg Leu Tyr His Glu Ala Asp Lys Thr
195 200 205

Tyr Met Leu Arg Glu Tyr Thr Ser Arg Glu Ser Lys Ile Ser Ser Leu
210 215 220

Met His Val Pro Pro Ser Leu Phe Thr Glu Pro Asn Glu Ile Ser Gln
225 230 235 240

Tyr Leu Pro Ile Lys Glu Ala Val Cys Glu Lys Leu Ile Phe Pro Glu
245 250 255

Arg Ile Asp Pro Asn Pro Ala Asp Ser Gln Lys Ser Thr Gln Val Glu
260 265 270

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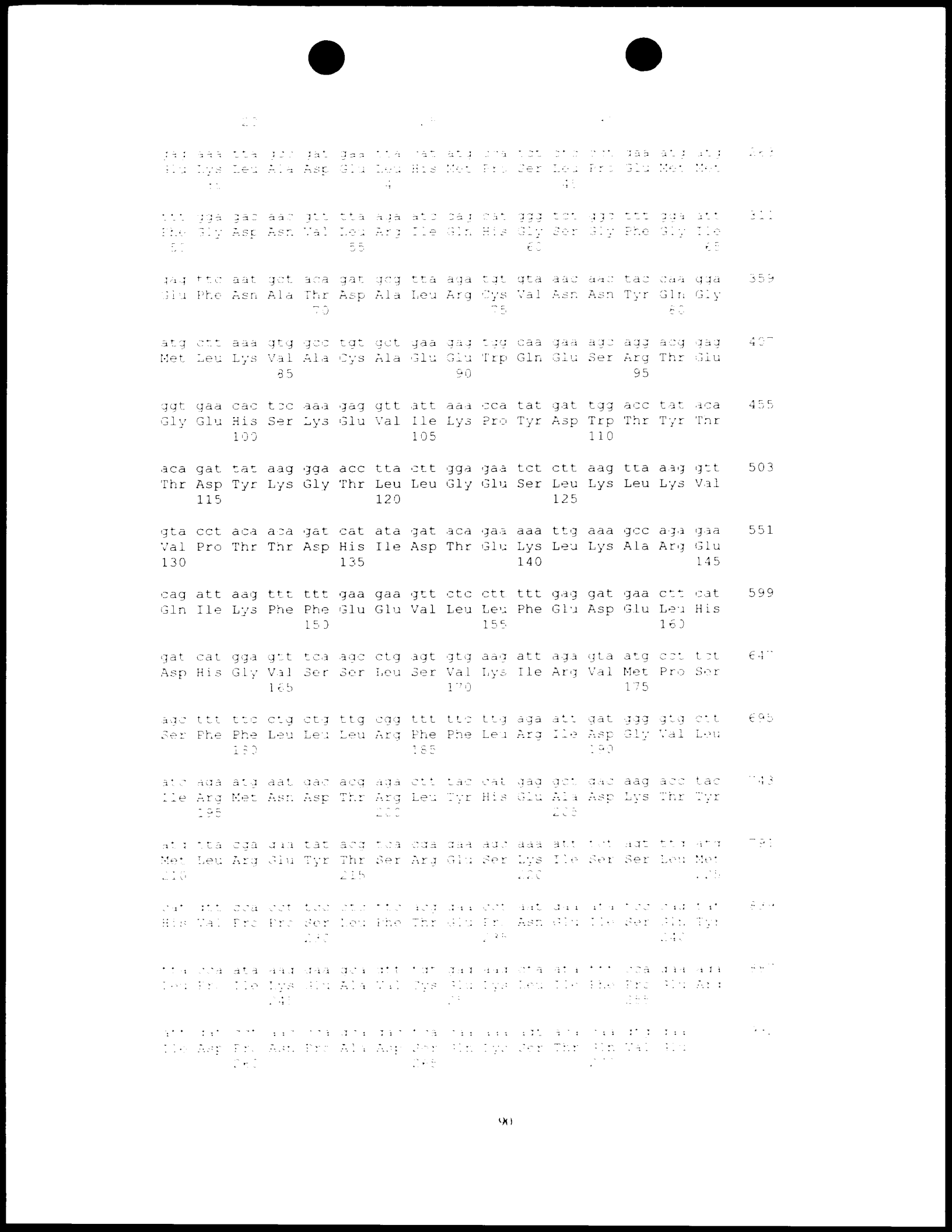

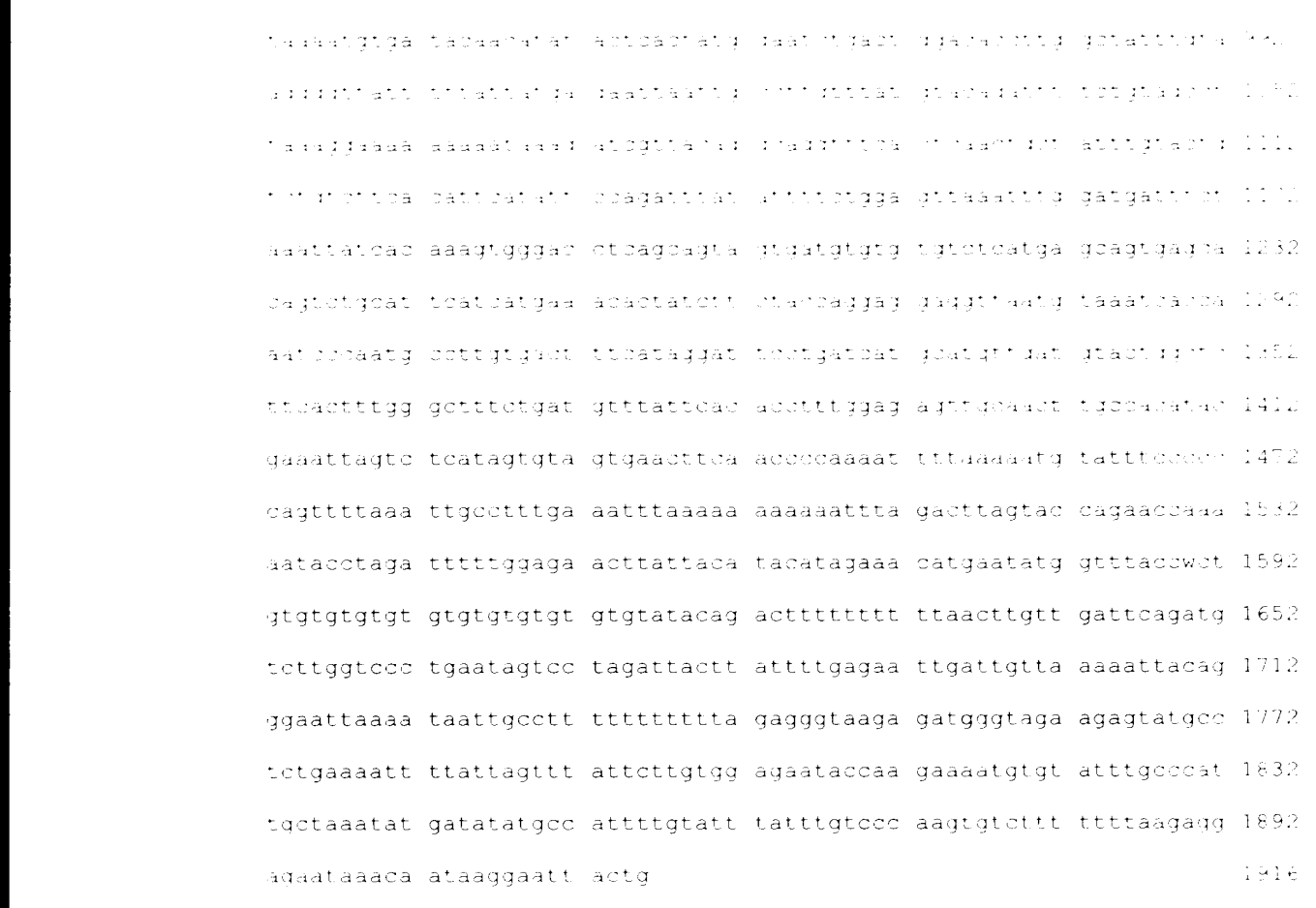

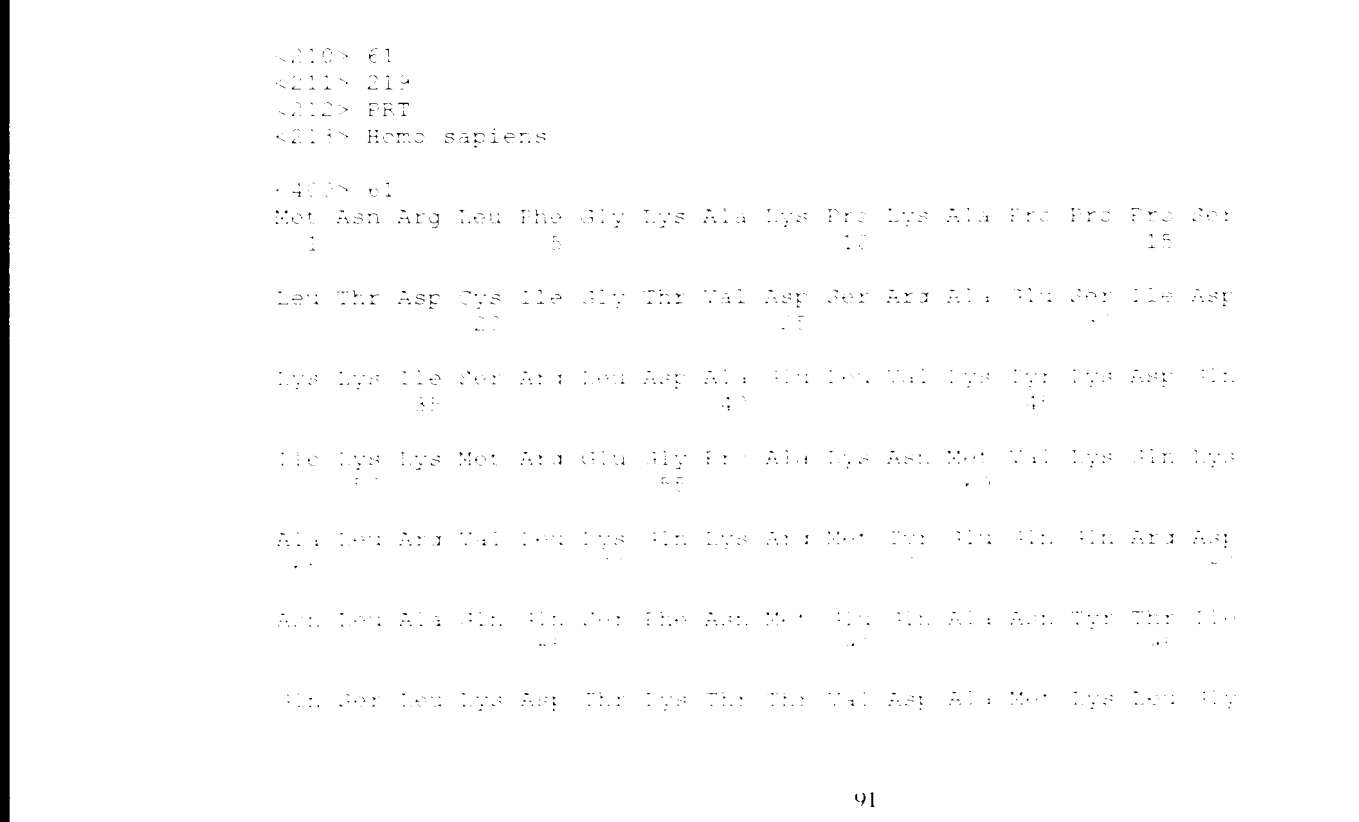

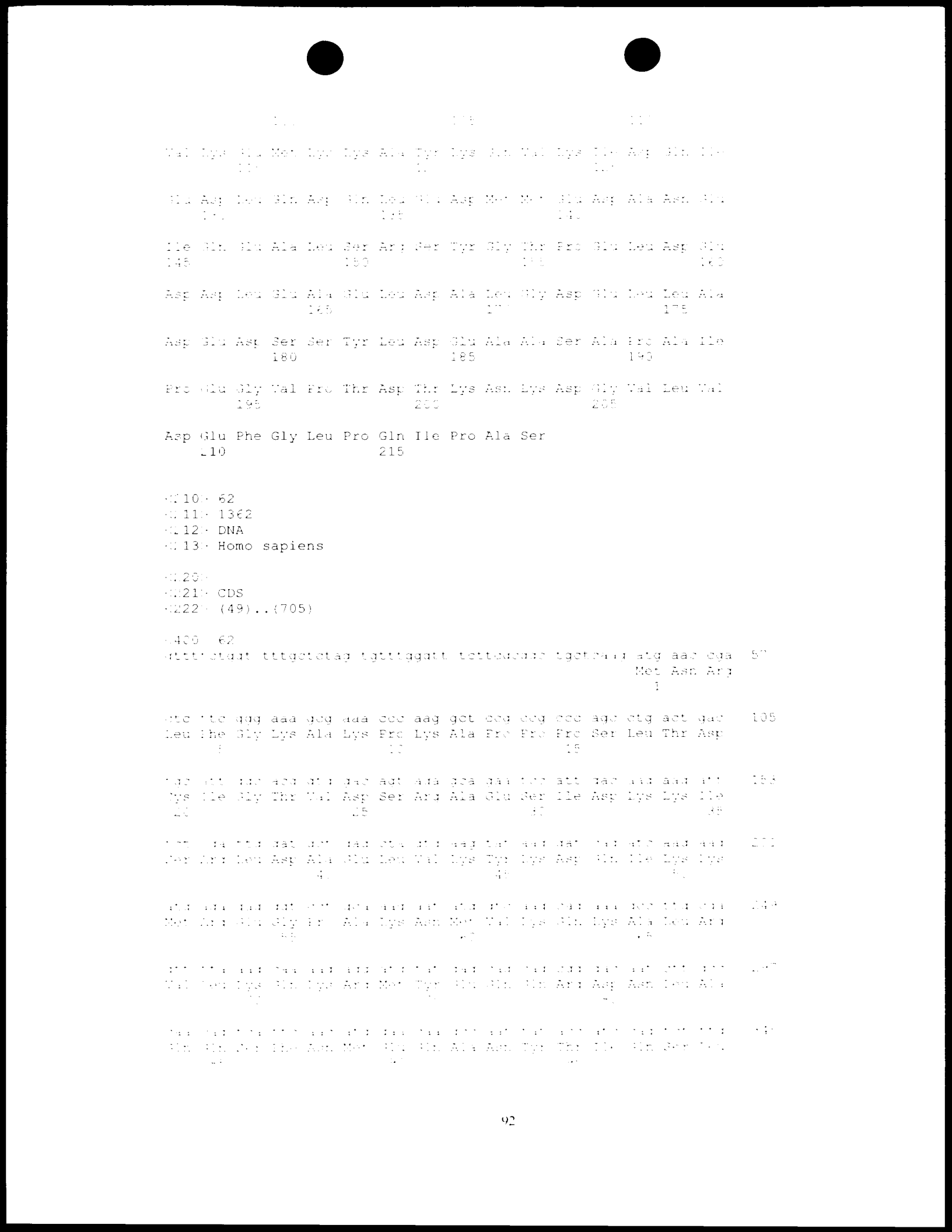

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Lys Asp Thr Lys Thr Thr Val Asp Phe Ile Lys Leu Gly Leu Lys
1               5                  10                  15

atg aaa aag gca tat aaa caa gtg aaa atc gac gat att gag gat tta    441
Met Lys Lys Ala Tyr Lys Gln Val Lys Ile Asp Asp Ile Glu Asp Leu
            20                  25                  30

caa gac cag cta gag gat atg atg gaa gat gca aat gaa atc caa gaa    489
Gln Asp Gln Leu Glu Asp Met Met Glu Asp Ala Asn Glu Ile Gln Glu
        35                  40                  45

gca ctg agt cgc agt tat ggc acc cca gaa ctg gat gaa gat gat tta    537
Ala Leu Ser Arg Ser Tyr Gly Thr Pro Glu Leu Asp Glu Asp Asp Leu
    50                  55                  60

gaa gca gag ttg gat gca cta ggt gat gag ctt ctg gct gat gaa gac    585
Glu Ala Glu Leu Asp Ala Leu Gly Asp Glu Leu Leu Ala Asp Glu Asp
65                  70                  75

agt tct tat ttg gat gag gca gca tct gca cct gca att cca gaa ggt    633
Ser Ser Tyr Leu Asp Glu Ala Ala Ser Ala Pro Ala Ile Pro Glu Gly
80                  85                  90                  95

gtt ccc act gat aca aaa aac aag gat gga gtt ctg gtg gat gaa ttt    681
Val Pro Thr Asp Thr Lys Asn Lys Asp Gly Val Leu Val Asp Glu Phe
                100                 105                 110

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Gly Leu Pro Gln Ile Pro Ala Ser
            115

aaacaaacac atattatggg actaggaaat atttatcttt ccaaatttgc cataacagat    795

ttaggtttct ttcctttctt tgaaggaaag tttaattaca ttgctctttt atttttttca    855

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ttaataataa tttgaaataa aactaagcaa atggaatctt aaaagtctat gacagtgtaa    1035

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Tyr Gly Glu Pro Leu Gly Arg Lys Thr His Ile Asp Asp Tyr Ser Thr
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Trp Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Tyr Glu Arg Tyr Arg
50 55 60

Glu Leu Val Gln Ala Gly Tyr Asp Val Arg Gln Pro Asp Lys Val Asn
65 70 75 80

Val Thr Leu Leu His Trp Ala Ala Ile Asn Asn Arg Ile Asp Leu Val
85 90 95

Lys Tyr Tyr Ile Ser Lys Gly Ala Ile Val Asp Gln Leu Gly Gly Asp
100 105 110

Leu Asn Ser Thr Pro Leu His Trp Ala Thr Arg Gln Gly His Leu Ser
115 120 125

Met Val Val Gln Leu Met Lys Tyr Gly Ala Asp Pro Ser Leu Ile Asp
130 135 140

Gly Glu Gly Cys Ser Cys Ile His Leu Ala Ala Gln Phe Gly His Thr
145 150 155 160

Ser Ile Val Ala Tyr Leu Ile Ala Lys Gly Gln Asp Val Asp Met Met
165 170 175

Asp Gln Asn Gly Met Thr Pro Leu Met Trp Ala Ala Tyr Arg Thr His
180 185 190

Ser Val Asp Pro Thr Arg Leu Leu Leu Thr Ser Asn Val Ser Val Asn
195 200 205

Leu Gly Asp Lys Tyr His Lys Asn Thr Ala Leu His Trp Ala Val Leu
210 215 220

Ala Gly Asn Thr Thr Val Ile Ser Leu Leu Leu Glu Ala Gly Ala Asn
225 230 235 240

Val Asp Ala Gln Asn Ile Lys Gly Val Ser Ala Leu Asp Leu Ala Lys
245 250 255

Gln Arg Lys Asn Val Trp Met Ile Asn His Leu Gln Val Ala Gln
260 265 270

Ala Lys Gly Tyr Asp Asn Pro Ser Ser Leu Arg Lys Leu Lys Ala Asp
275 280 285

Lys [illegible] [illegible] Arg [illegible] Lys Val Met Leu Gly Thr [illegible] His Leu Val Ile
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Trp Leu Val Gly [illegible] Ala Asp Leu Asn Ile Asp Ser Trp Leu Ile
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[illegible]

[illegible]

[illegible]

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                1               5                  10

ggc tat gtg ccg ctt ctc cac ccg gag gaa atc aaa ccc caa agc cat      96
Gly Tyr Val Pro Leu Leu His Pro Glu Glu Ile Lys Pro Gln Ser His
            15                  20                  25

tat aac cat gga tat ggt gaa cct ctt gga cgg aaa act cat att gat     144
Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly Arg Lys Thr His Ile Asp
        30                  35                  40

gat tac agc aca tgg gac ata gtc aag gct aca caa tat gga ata tat     192
Asp Tyr Ser Thr Trp Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Tyr
    45                  50                  55                  60

gaa cgc tgt cga gaa ttg gtg gaa gca ggt tat gat gta cgg caa ccg     240
Glu Arg Cys Arg Glu Leu Val Glu Ala Gly Tyr Asp Val Arg Gln Pro
                65                  70                  75

gac aaa gaa aat gtt acc ctc ctc cat tgg gct gcc atc aat aac aga     288
Asp Lys Glu Asn Val Thr Leu Leu His Trp Ala Ala Ile Asn Asn Arg
            80                  85                  90

ata gat tta gtc aaa tac tat att tcg aaa ggt gct att gtg gat caa     336
Ile Asp Leu Val Lys Tyr Tyr Ile Ser Lys Gly Ala Ile Val Asp Gln
        95                  100                 105

ctt gga ggg gac ctg aat tca act cca ttg cac tgg gcc aca aga cat     384
Leu Gly Gly Asp Leu Asn Ser Thr Pro Leu His Trp Ala Thr Arg His
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ggc cat cta tcc atg gtt gtg caa cta atg aaa tat ggt gca gat cct     432
Gly His Leu Ser Met Val Val Gln Leu Met Lys Tyr Gly Ala Asp Pro
125                 130                 135                 140

tca tta att gat gga gaa gga tgt agc tgt att cat ctt gct gct caa     480
Ser Leu Ile Asp Gly Glu Gly Cys Ser Cys Ile His Leu Ala Ala Gln
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Ile Gly His Thr Ser Ile Val Ala Tyr Leu Ile Ala Lys Gly His Asp
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[illegible]                                                        576
Val Asp Met Met Asp Gln Asn Gly Met Thr Pro Leu Met Trp Ala Ala
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Tyr Arg Thr His Ser Val Arg Pro Thr Arg Leu Leu Thr Ser Asn
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Val Ser Val Asn Leu Gly Asp Lys Tyr His Lys Asn Thr Ala Leu His
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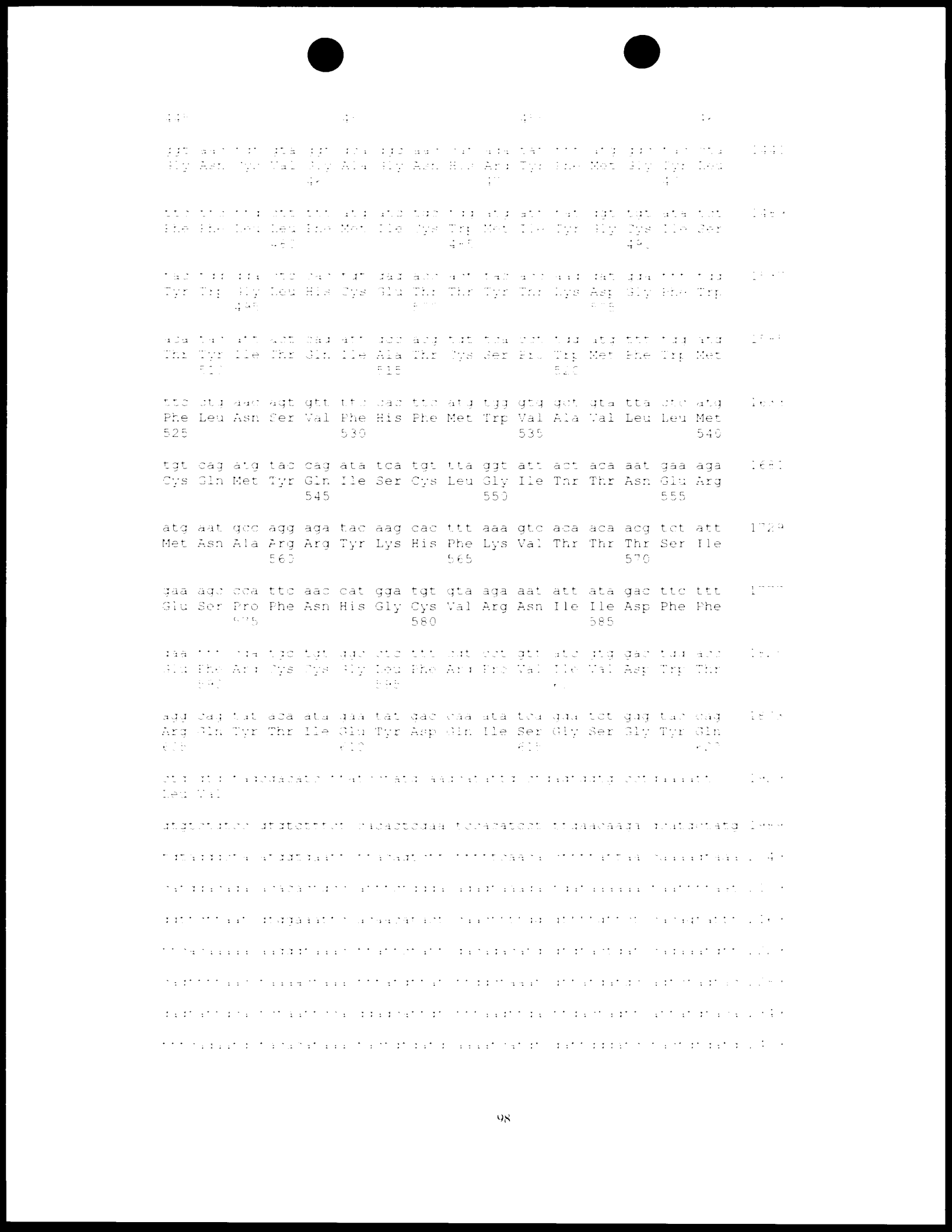

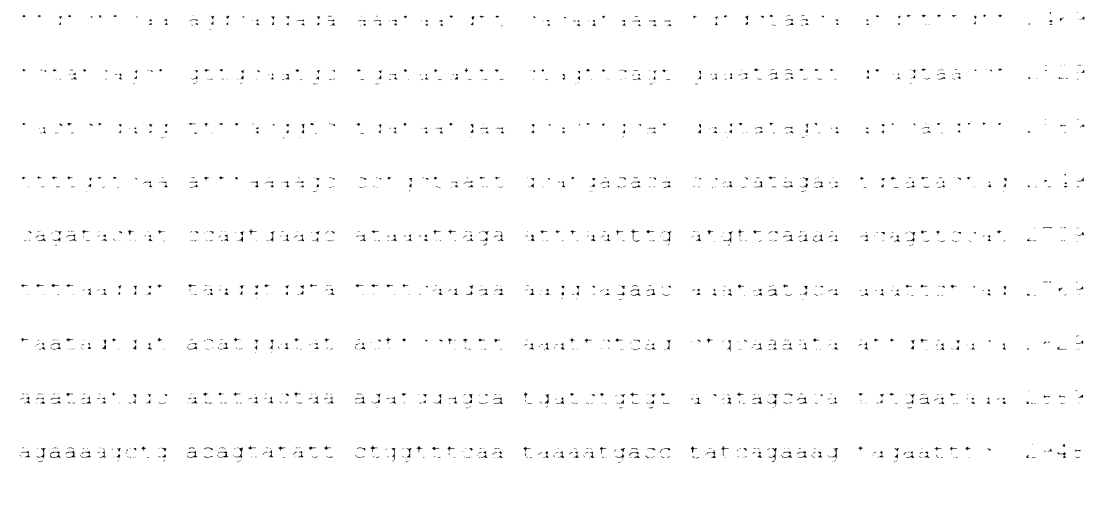

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<213> Homo sapiens

<400> 65

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Ile Lys Pro Gln Ser His Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly
35 40 45

Arg Lys Thr His Ile Asp Asp Tyr Ser Thr Trp Asp Ile Val Lys Ala
50 55 60

Thr Gln Tyr Gly Ile Tyr Glu Arg Cys Arg Glu Leu Val Glu Ala Gly
65 70 75 80

Tyr Asp Val Arg Gln Pro Asp Lys Glu Asn Val Thr Leu Leu His Trp
85 90 95

Ala Ala Ile Asn Asn Arg Ile Asp Leu Val Lys Tyr Tyr Ile Ser Lys
100 105 110

Gly Ala Ile Val Asp Gln Leu Gly Gly Asp Leu Asn Ser Thr Ile Leu
115 120 125

His Trp Ala Thr Arg Gln Gly His Leu Ser Met Val Val Gln Leu Met
130 135 140

Lys Tyr Gly Ala Asp Pro Ser Leu Leu Asp Gly Glu Gly Tyr Ser Tyr
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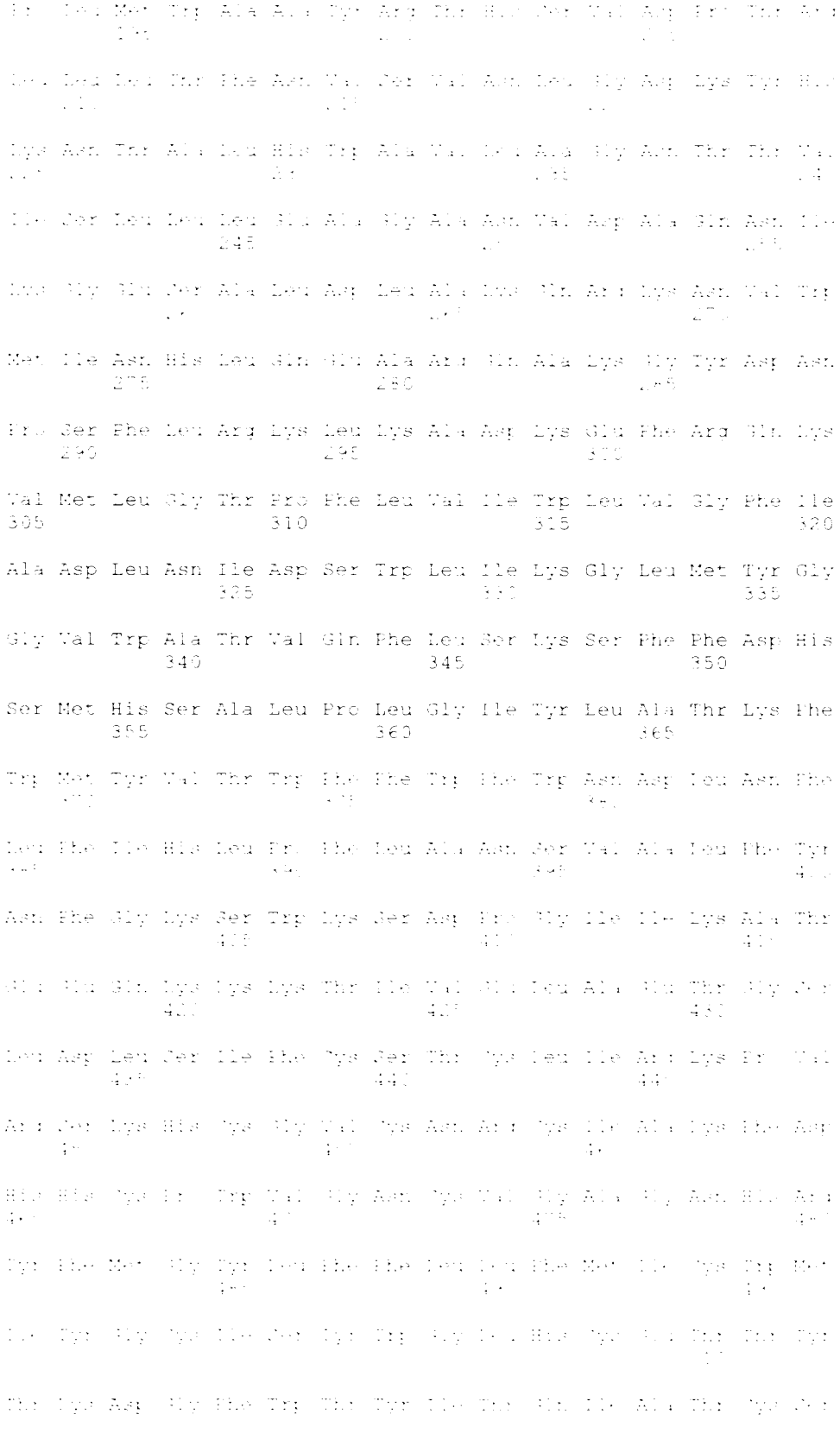
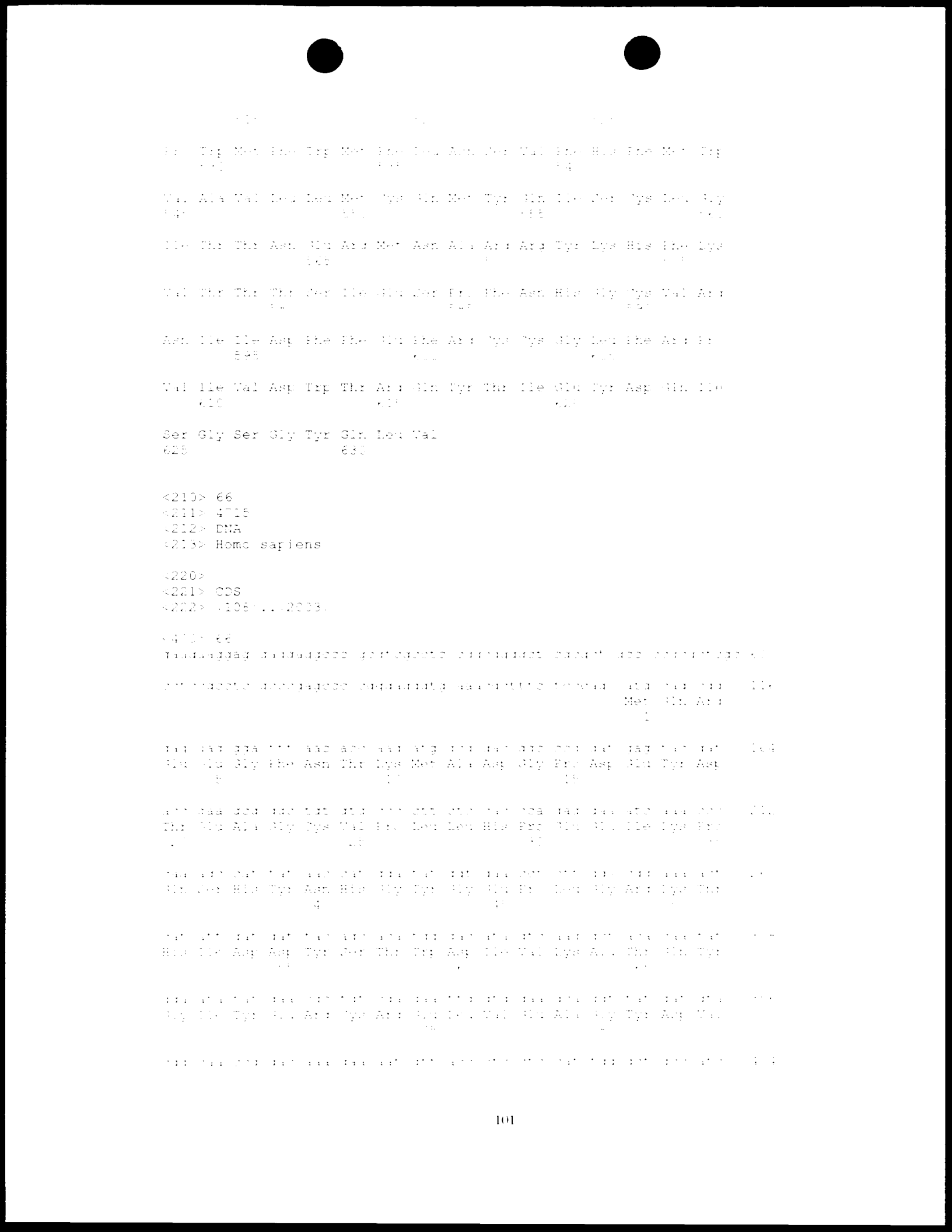
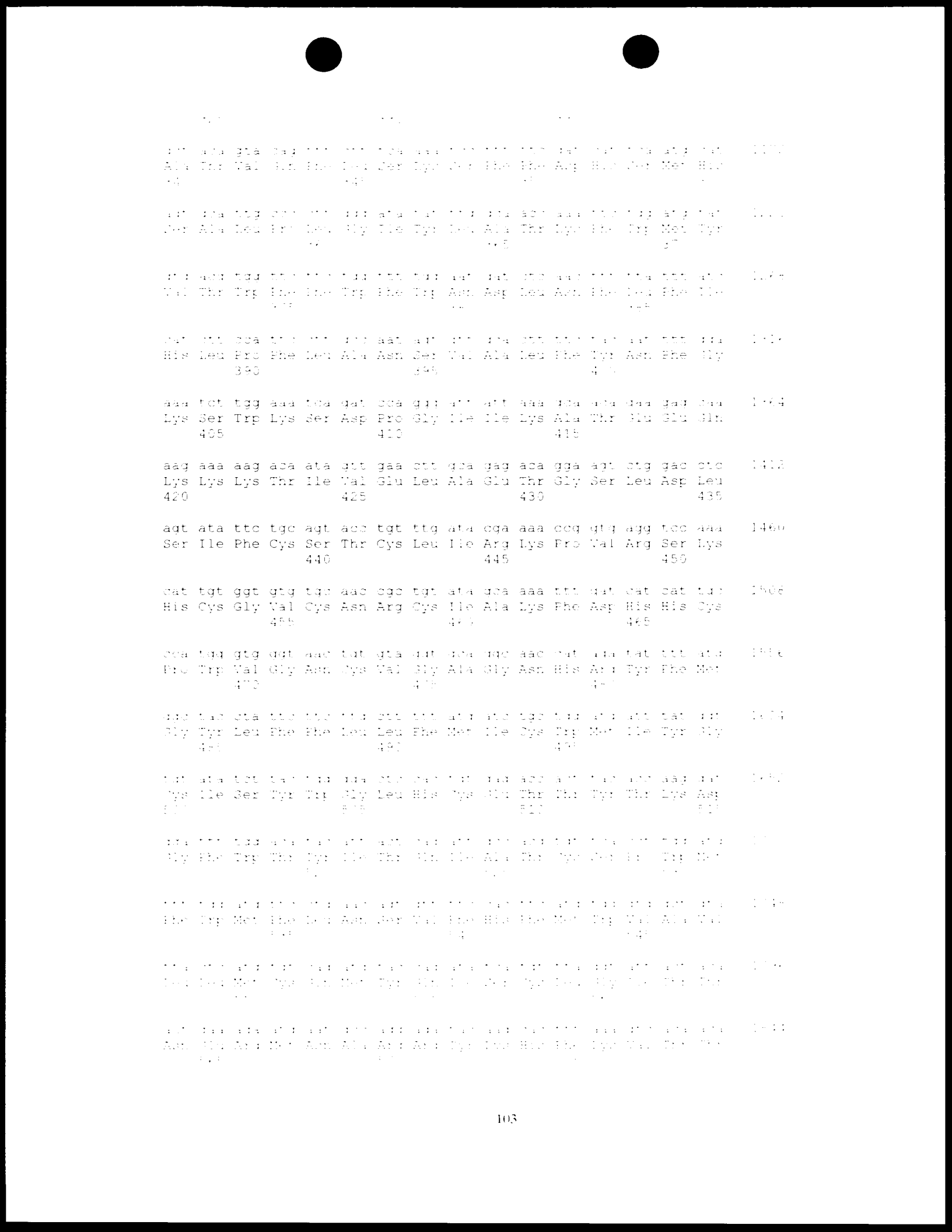
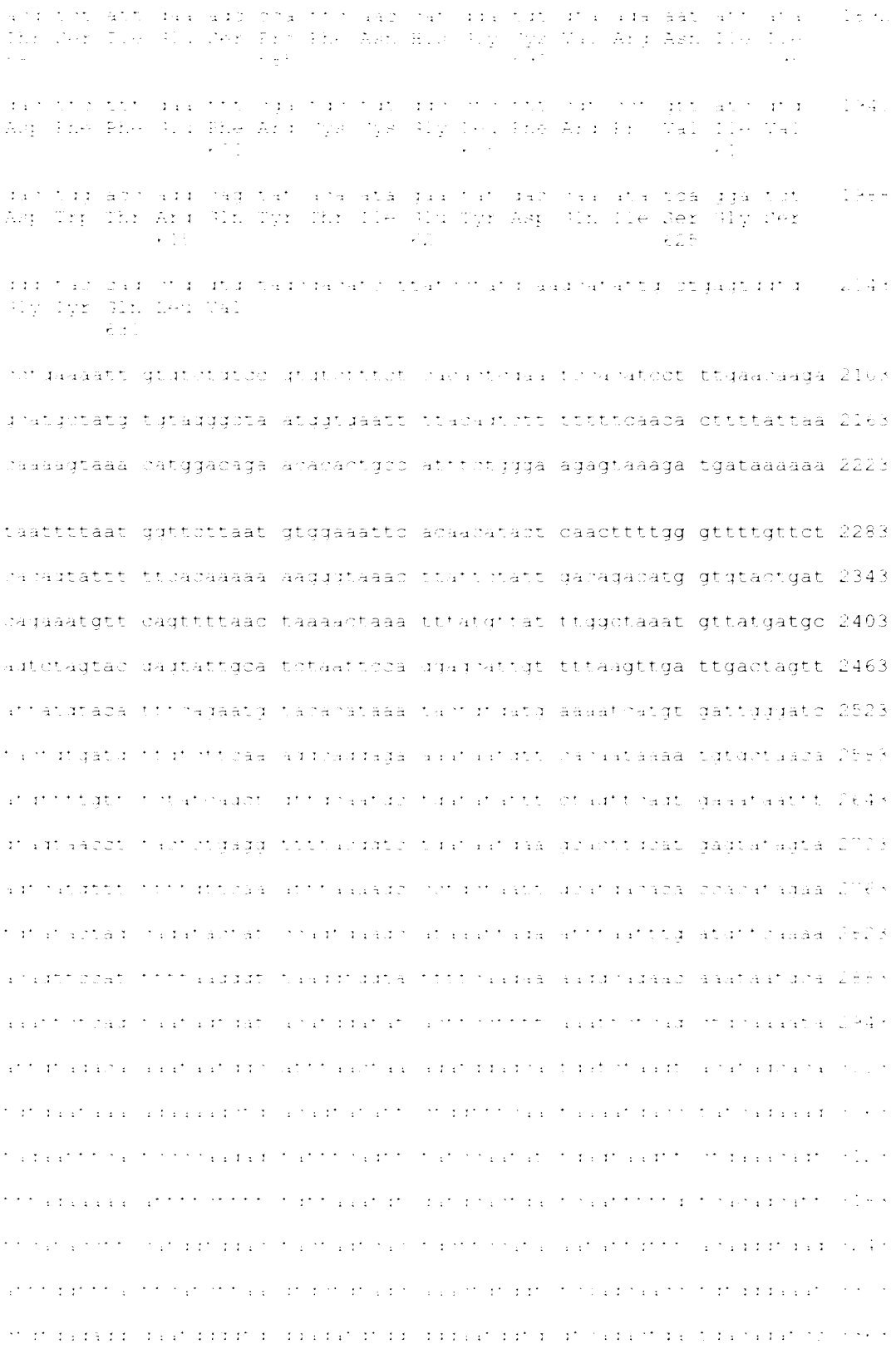
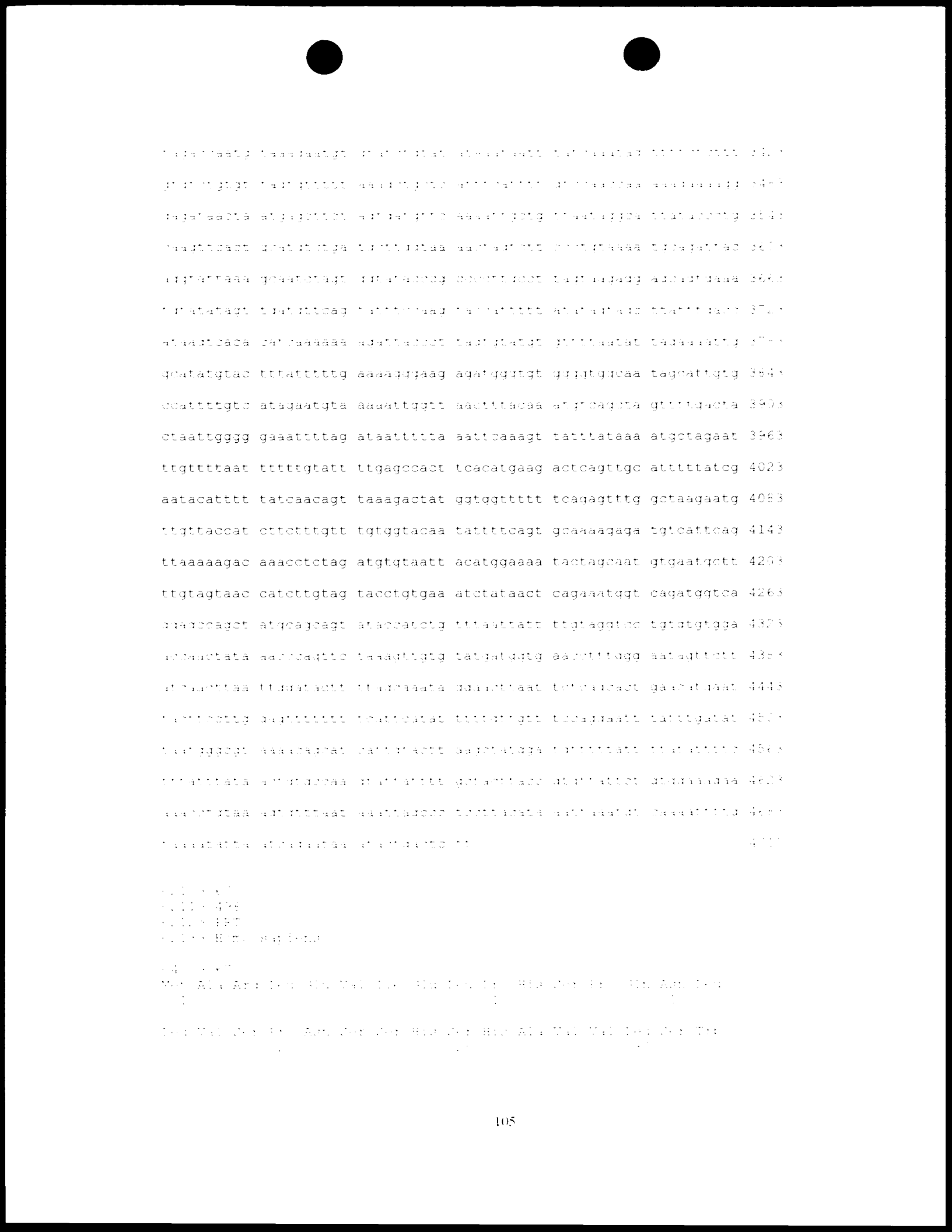
Ile Ala Lys Gly Val Asp Val Asp Met Met Asp Gln Asn Gly Met Thr

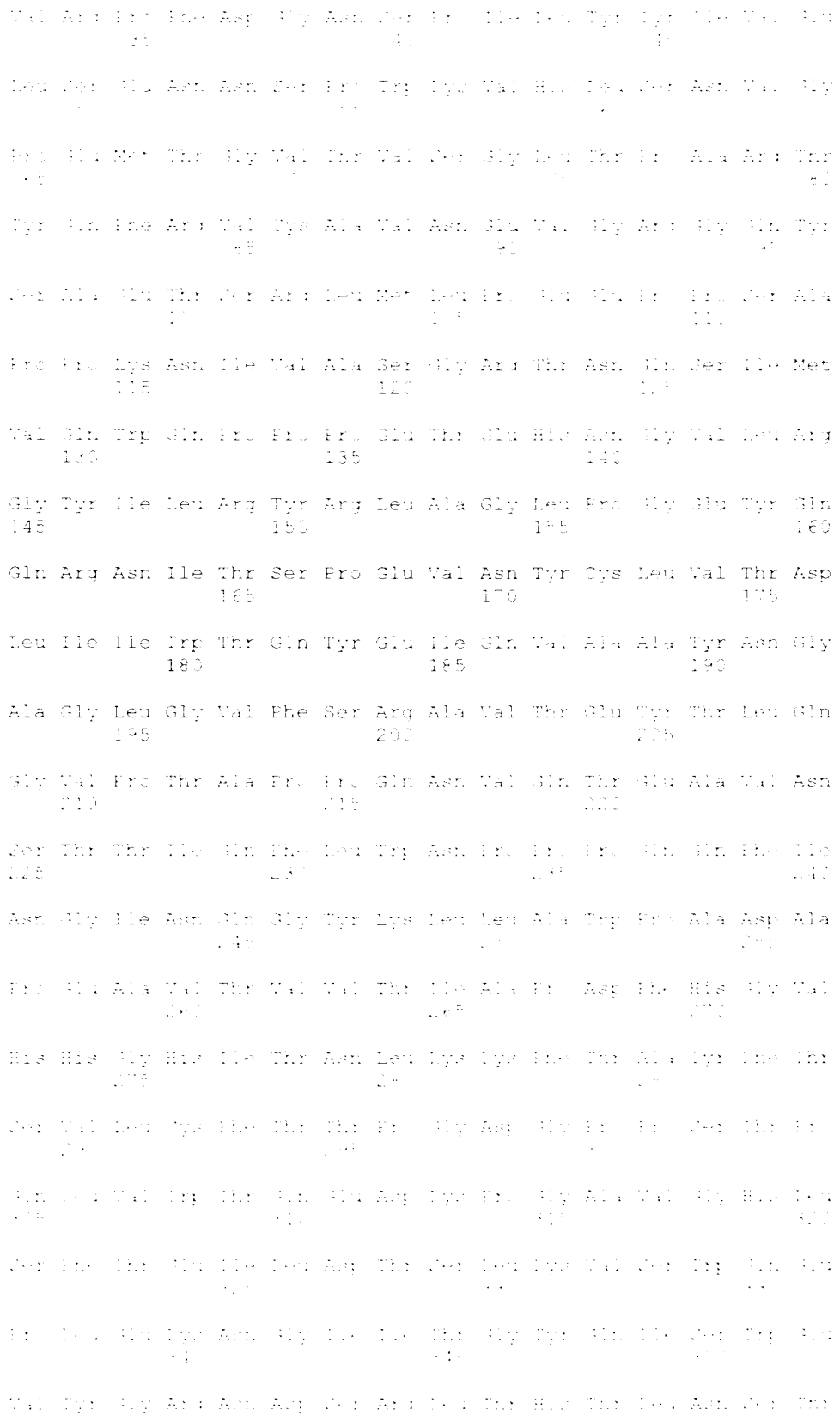


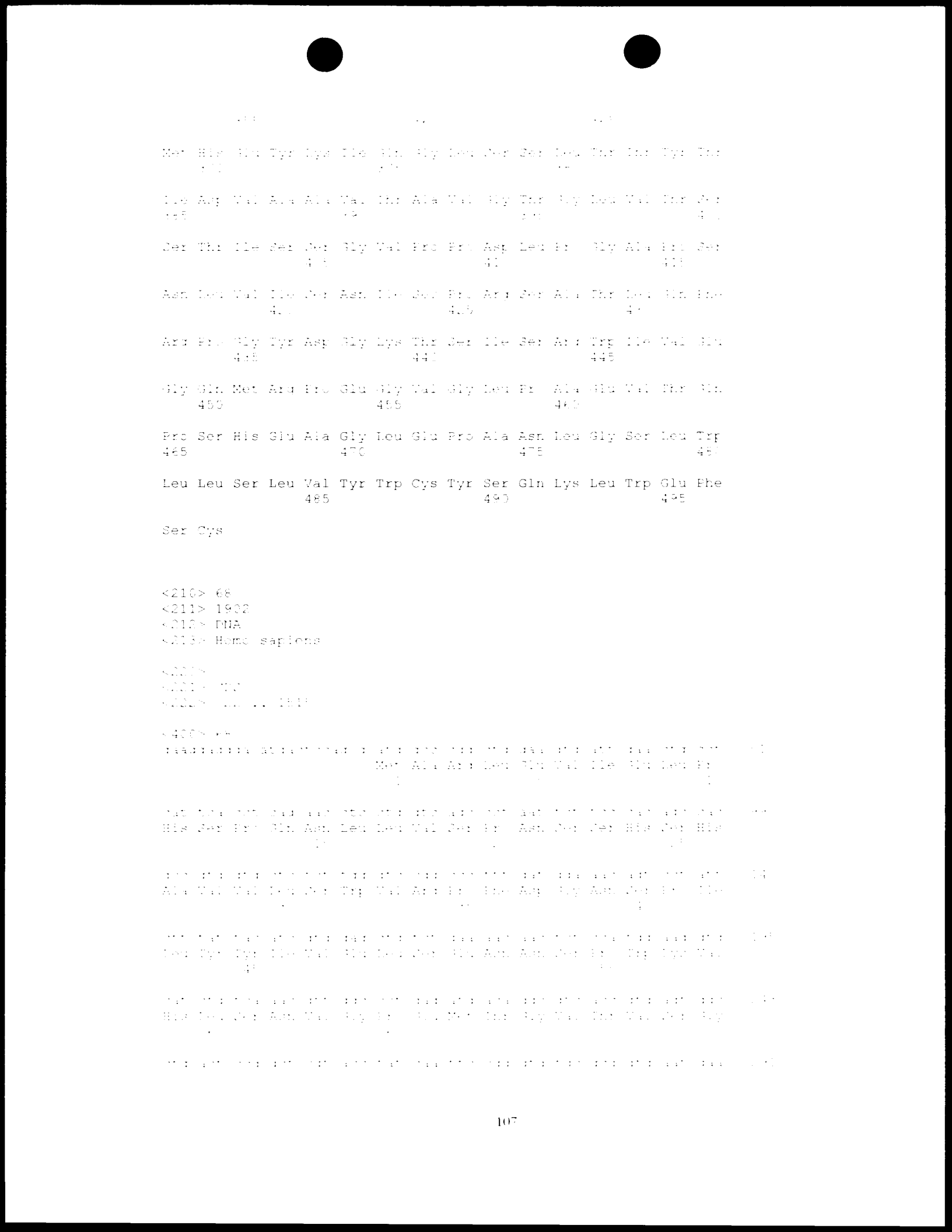


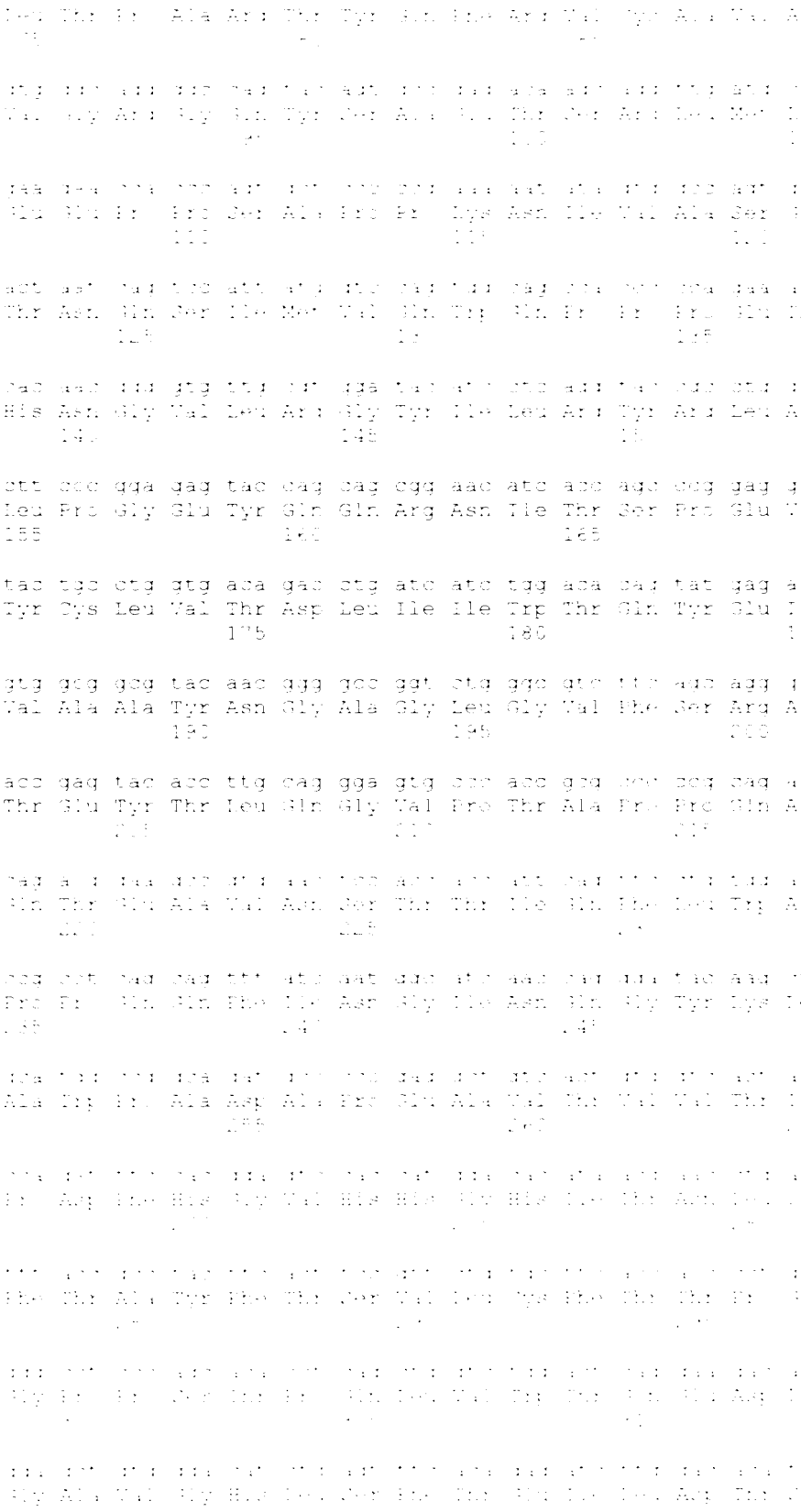












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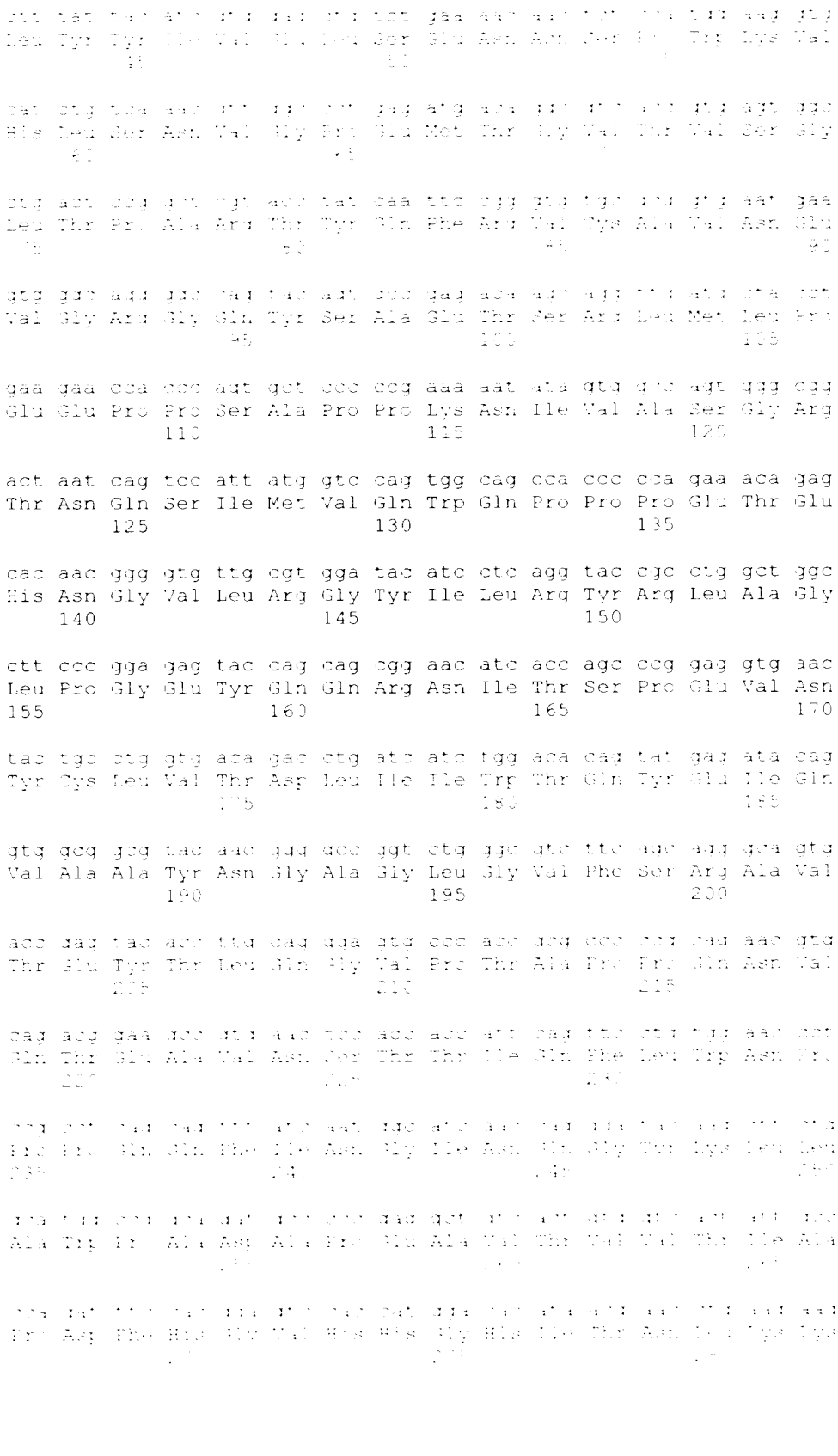

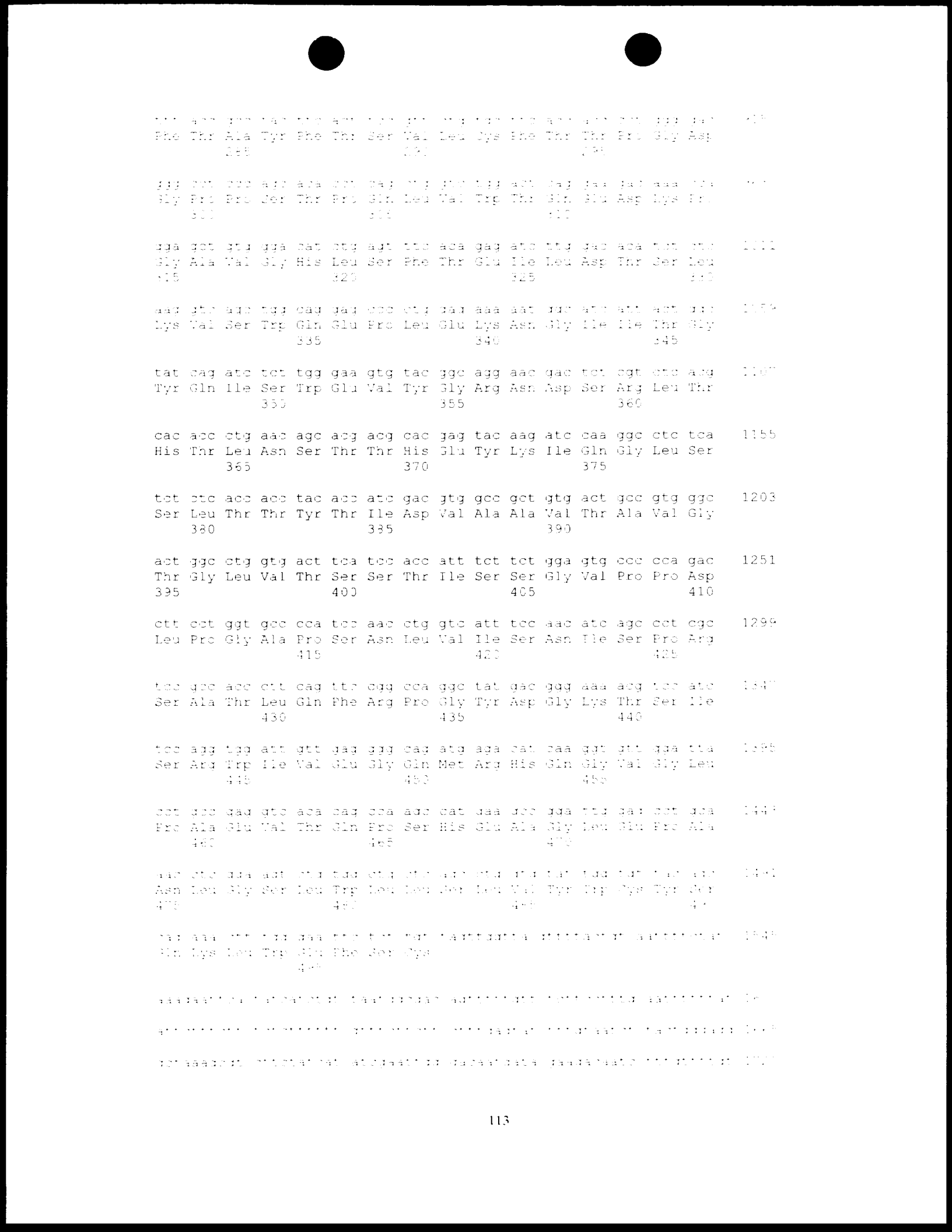

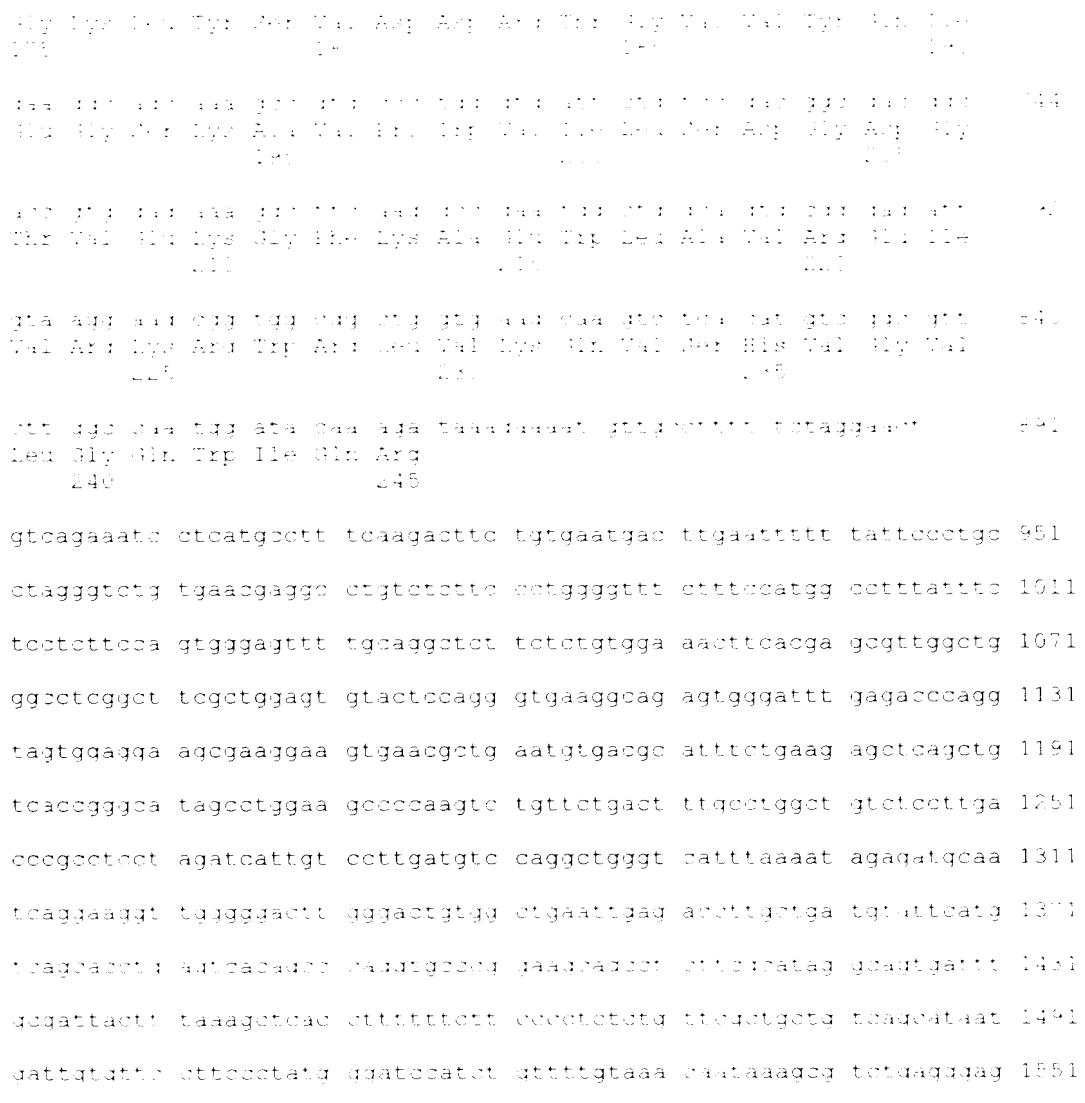

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His Asp Leu Lys Ser Leu Leu Ser His Ala Pro Gly Lys Lys Val Ile
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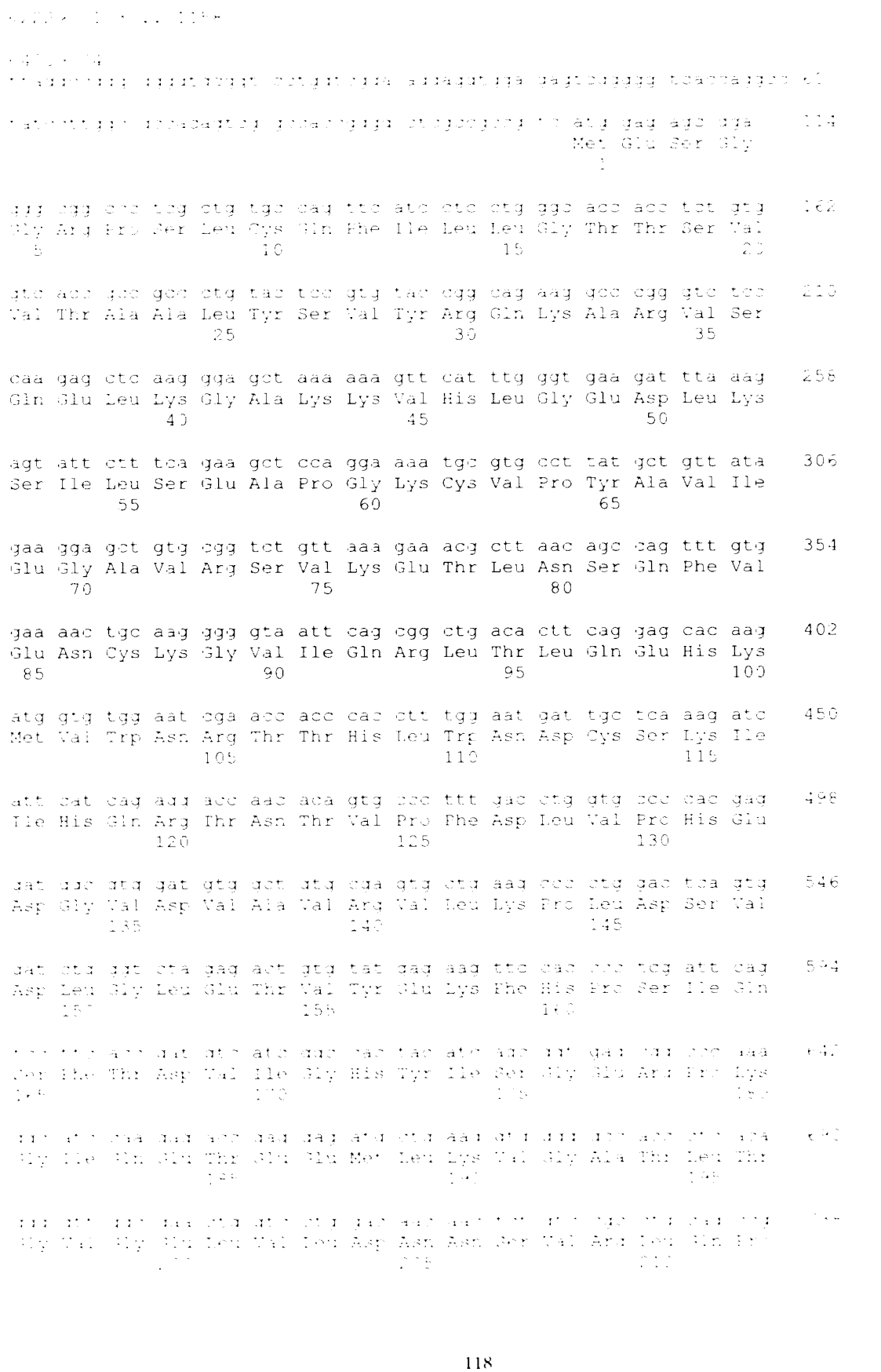
Tyr Ala Val Ile Ile Gly Ala Val Arg Ser Val Lys His Thr Leu Asn



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Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys
40 45 50

Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile
55 60 65

Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val
70 75 80

Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys
85 90 95 100

Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp Cys Ser Lys Ile
105 110 115

Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu
120 125 130

Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val
135 140 145

Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His Pro Ser Ile Gln
150 155 160

Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly Glu Arg Pro Lys
165 170 175

Gly Ile Thr Glu Thr Glu Glu Met Leu Lys Val Gly Ala Thr Leu Thr
180 185 190

Gly Val Gly Gln Leu Val Ile Asp Asn Asn Ser Val Arg Leu Gln Leu
195 200 205

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Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser
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??? ??? cag agg cag gag ??? agc gtc agg ctc ??? aag gtg ctg gcg   ???
Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala
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ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg   ???
Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg
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aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag   ???
Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln
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gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct   ???
Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro
            270                 275

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc   ???
Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser
        285                 290

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc   ???
Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr
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gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga   ???
Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg
310                 315                 320

cag gcg atc acc cgg gtg ata ccc cog tac aac agc taatagtttg        ???
Gln Ala Ile Thr Arg Val Ile Pro Pro Tyr Asn Ser
            325                 330

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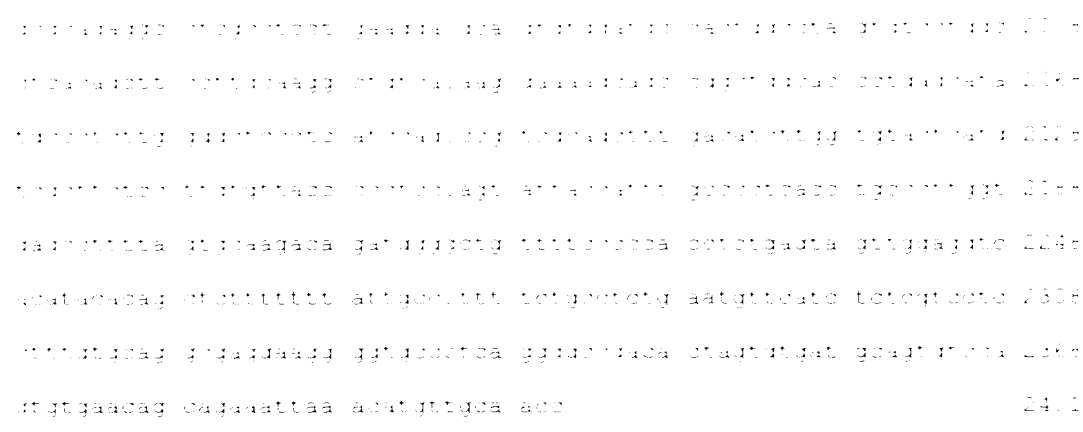

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35 40 45

Glu Asp Leu Lys Ser Ile Leu Ser Glu Ala Pro Gly Lys Lys Val Pro
50 55 60

Tyr Ala Val Ile Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn
65 70 75 80

Ser Gln Phe Val Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu
85 90 95

Gln Glu His Lys Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp
100 105 110

Lys Ser Lys Ile Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu
115 120 125

Val Pro His Gln Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro
130 135 140

Leu Asp Ser Val Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His
145 150 155 160

Pro Ser Ile Gln Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly
165 170 175

His Arg Ile Lys Gly Ile Gln His Thr Asn His Met Leu Lys Val Gly
180 185 190

Ala Thr Leu Thr Gly Val Gly His Leu Val Leu Asp Asn Asn Ser Val

Arg Leu Gln Pro Pro Lys Gln Gly Met Lys Tyr Tyr Leu Ser Ser Gln
Asp Phe Arg Ser Leu Leu Gln Arg Gln Leu Ser Ser Val Arg Leu Trp
Lys Val Leu Ala Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe
Phe Ile Leu Arg Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu
Lys Gln Met Gln Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser
Arg Ala Lys Pro Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val
Cys Leu Ser Ser Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val
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Arg Gln Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val
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20 25 30

gtg gag gtg acg ctg cag cac gag gcc ctg gtg agc gag atg gag gtg 258
Val Glu Val Thr Leu Gln His Glu Ala Leu Val Ser Glu Met Glu Val
35 40 45

atg aag ctg gtg agc aac ctg gag gtg ctc ctg gag gag aag aag gag 306
Met Lys Leu Val Ser Asn Leu Glu Val Leu Leu Glu Glu Lys Lys Glu
50 55 60

aag ggc atc ctg gcc gac agc ctg cac ctg cgc agc gag gtg gcc cgc 354
Lys Gly Ile Leu Ala Asp Ser Leu His Leu Arg Ser Glu Val Ala Arg
65 70 75

ctg cgc cgc ctg ctc atc ccc aag gtg ggc ctg gag gag ccc cag ccc 402
Leu Arg Arg Leu Leu Ile Pro Lys Val Gly Leu Glu Glu Pro Gln Pro
80 85 90 95

cag cag ctg ccc cgg cag aag cgc ttc gtg gcc gcc ccg ccc agc atc 450
Gln Gln Leu Pro Arg Gln Lys Arg Phe Val Ala Ala Pro Pro Ser Ile
100 105 110

tgg cag ctg cag ctg cgc aac cgc gag tgc ggc ctg gcg ctg cgc gag 498
Trp Gln Leu Gln Leu Arg Asn Arg Glu Cys Gly Leu Ala Leu Arg Glu
115 120 125

gtg gag ggc cag gtg acg ctg ctg cag gag cgc ctg gag ctg cgc gcg 546
Val Glu Gly Gln Val Thr Leu Leu Gln Glu Arg Leu Glu Leu Arg Ala
130 135 140

gag gcg cag gcg cag cgc gag cgc gag gcg cgc ctg cag acg ctg gtg 594
Glu Ala Gln Ala Gln Arg Glu Arg Glu Ala Arg Leu Gln Thr Leu Val
145 150 155

gag aag ctg tcg gcg gtg gtg gag cgc ggc gag gcg gcg ctg cag ctg 642
Glu Lys Leu Ser Ala Val Val Glu Arg Gly Glu Ala Ala Leu Gln Leu
160 165 170 175

cag gcg cgc gcg gag ctg cag cag cag cac gcg cgc gag gtg gcg cgc 690
Gln Ala Arg Ala Glu Leu Gln Gln Gln His Ala Arg Glu Val Ala Arg
180 185 190

ctg cgc gcg ctg ctg cag gcc gcg ctg gac gag gcg gcg cgc gcg cgc 738
Leu Arg Ala Leu Leu Gln Ala Ala Leu Asp Glu Ala Ala Arg Ala Arg
195 200 205

gag gag gcg cgc cgc ctg gcg gcg ctg gtg gag agc aac gcg cgc ctg 786
Glu Glu Ala Arg Arg Leu Ala Ala Leu Val Glu Ser Asn Ala Arg Leu
210 215 220

gac gcg cgc ctg cgc gag agc cag gag cgc ctg cag gcg ctg gag gcg 834
Asp Ala Arg Leu Arg Glu Ser Gln Glu Arg Leu Gln Ala Leu Glu Ala
225 230 235

ggc ctg cag ctg cgc ctg gac ccg gcg gcg gcg ccg cgc gag ccg gcg 882
Gly Leu Gln Leu Arg Leu Asp Pro Ala Ala Ala Pro Arg Glu Pro Ala
240 245 250 255

ctg ctg gcg cag cag ctg cgc gcg cgc atc gag ggc ctg gag gag gag 930
Leu Leu Ala Gln Gln Leu Arg Ala Arg Ile Glu Gly Leu Glu Glu Glu
260 265 270

ctg acg ctg ctg acg cac gcg ctg cag cgc aag ctg gcg gag ccg ccg 978
Leu Thr Leu Leu Thr His Ala Leu Gln Arg Lys Leu Ala Glu Pro Pro
275 280 285

gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg 1026
Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro
290 295 300

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Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro
305 310 315

gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg 1122
Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro Ala Pro
320 325 330 335

gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg gcg ccg 1170
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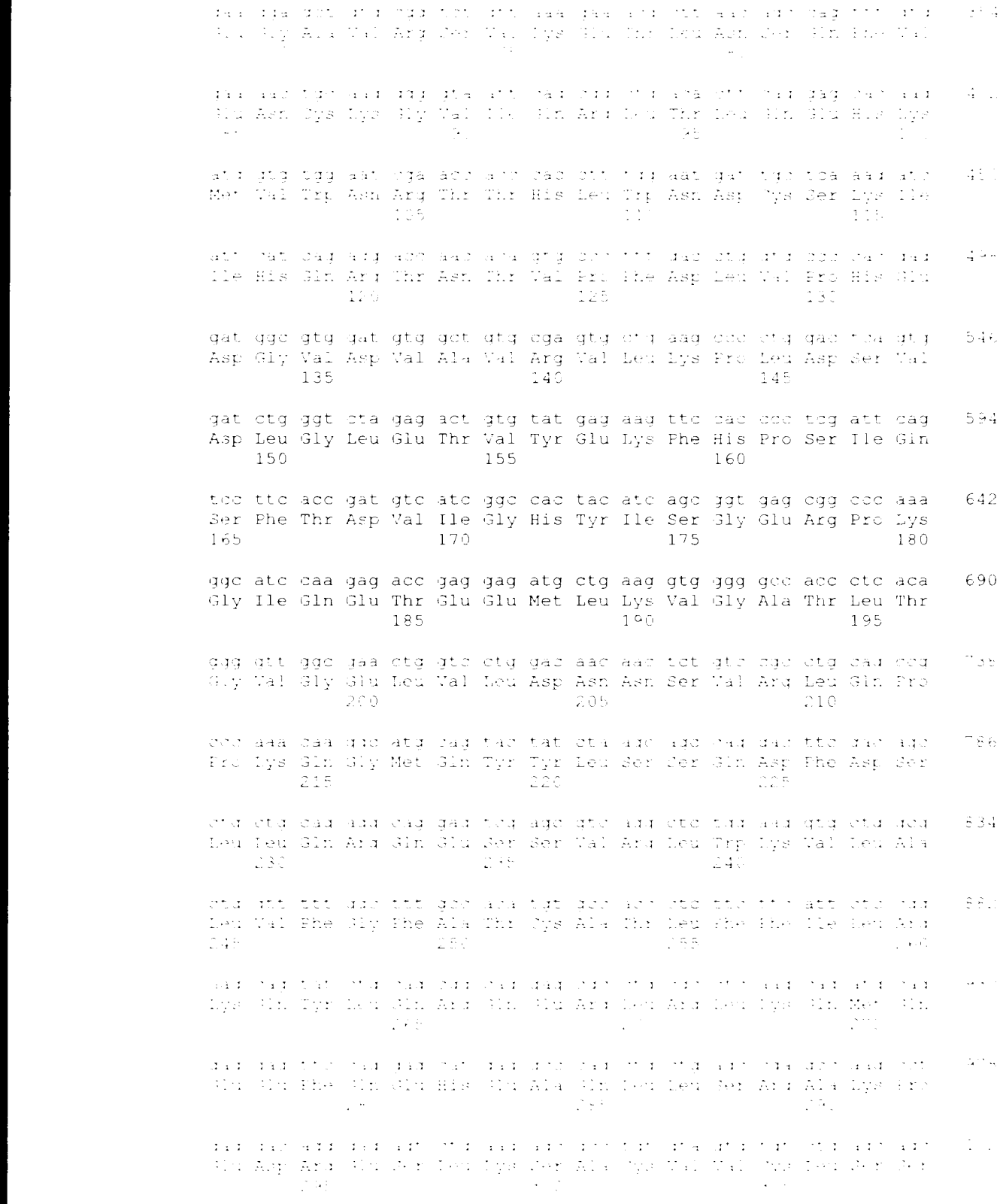

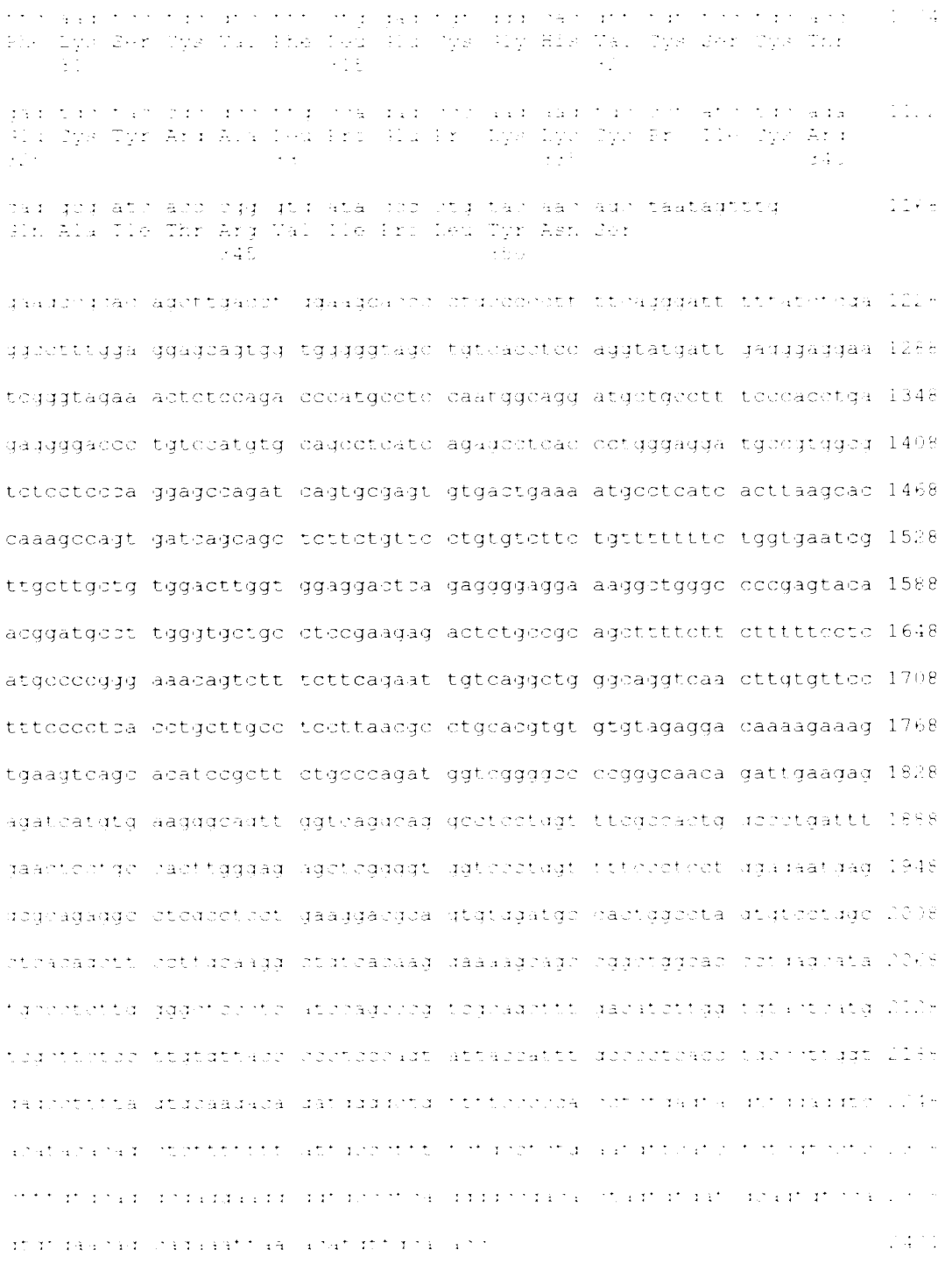

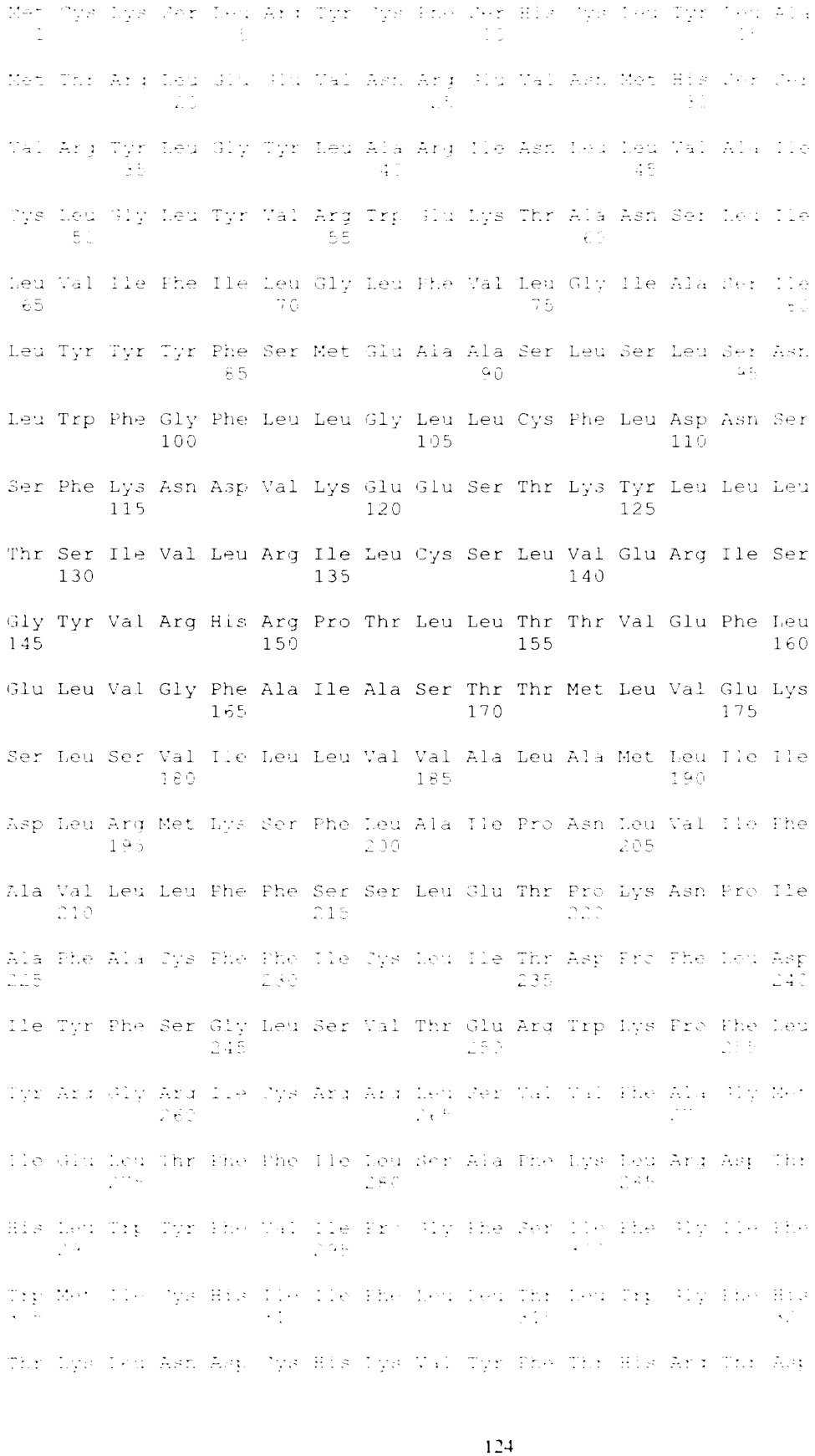

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Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu Ile Ile
180 185 190

Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu Val Ile Phe
195 200 205

Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile
210 215 220

Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro Phe Leu Asp
225 230 235 240

Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys Pro Phe Leu
245 250 255

Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe Ala Gly Met
260 265 270

Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr
275 280 285

His Leu Trp Tyr Thr Val Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe
290 295 300

Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp Gly Phe His
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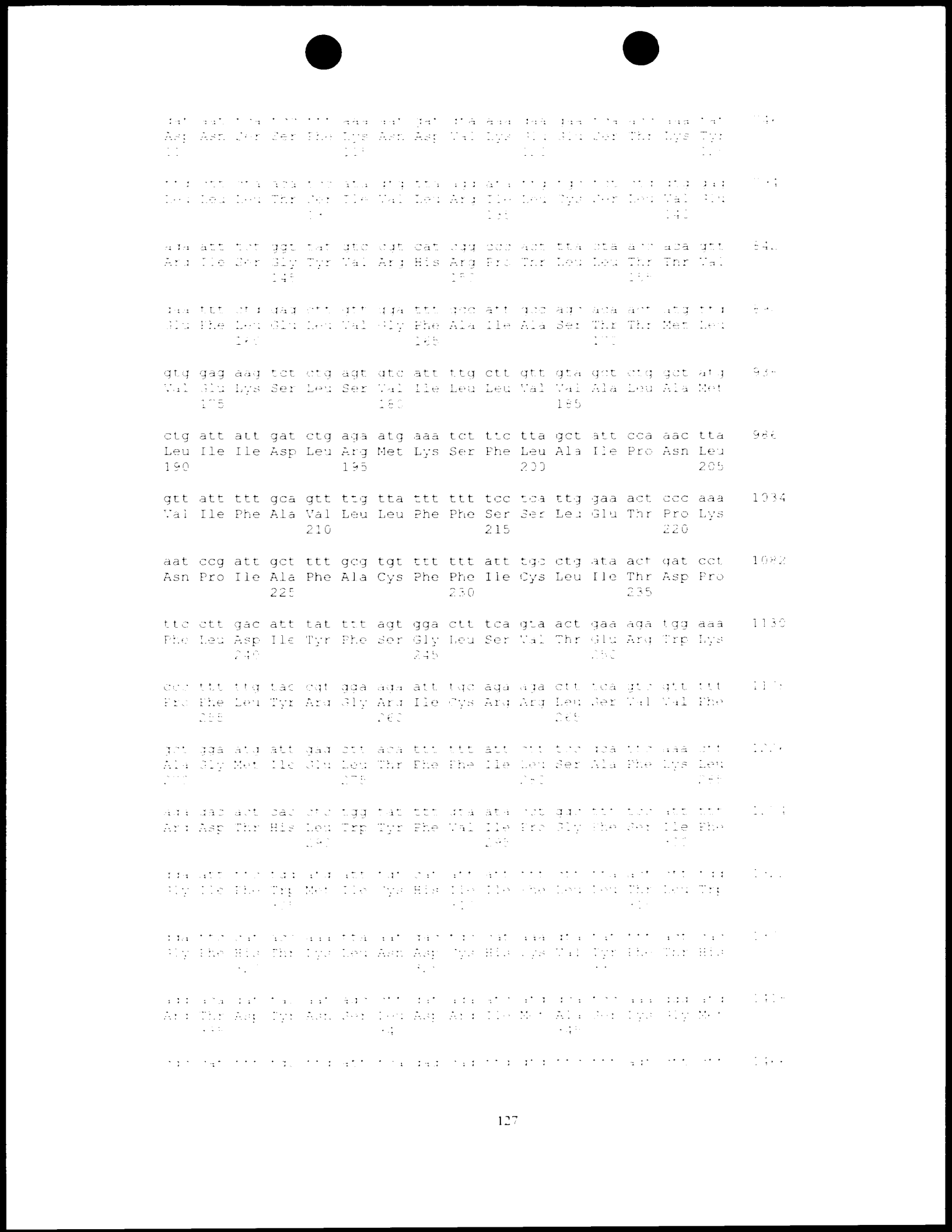
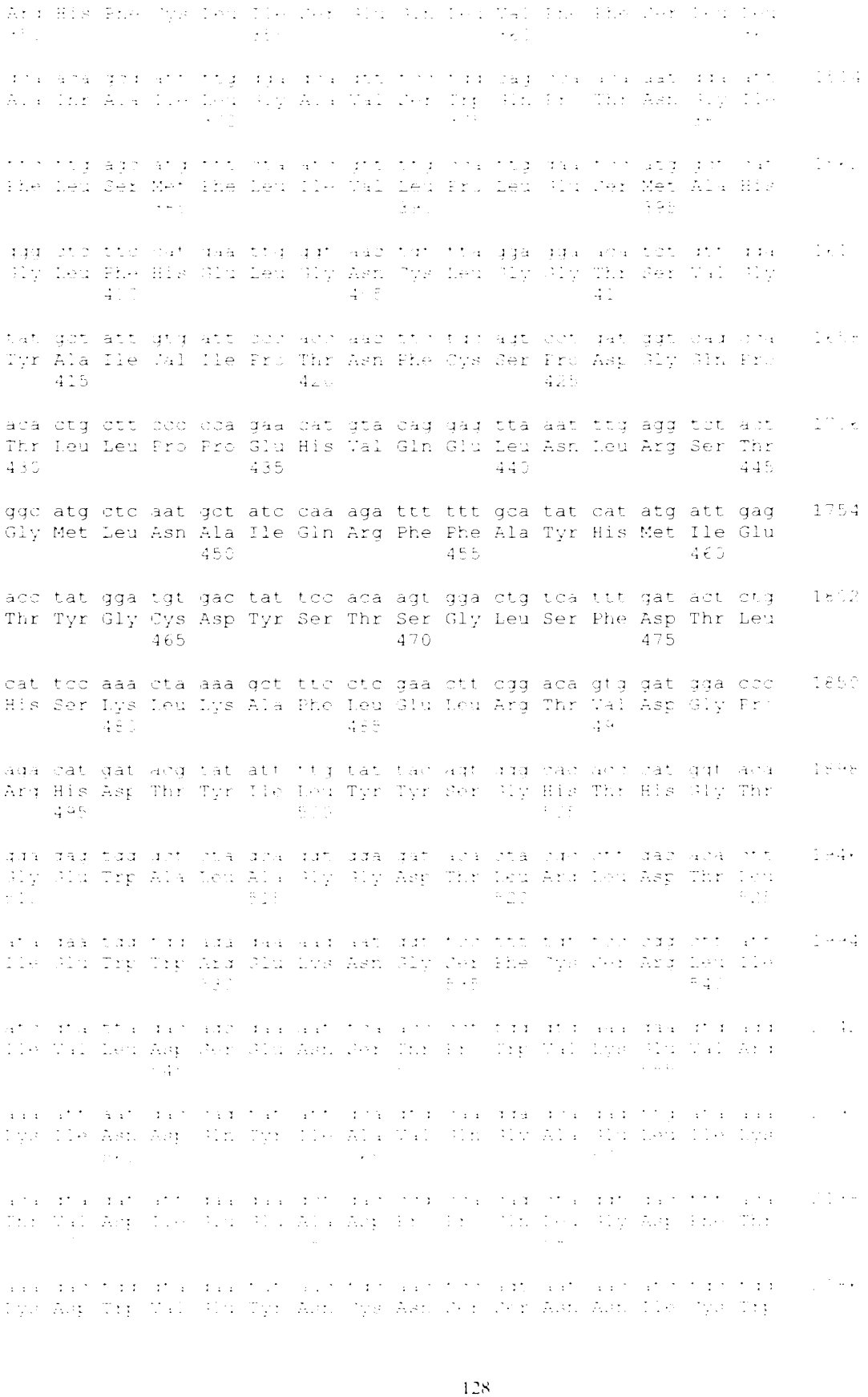
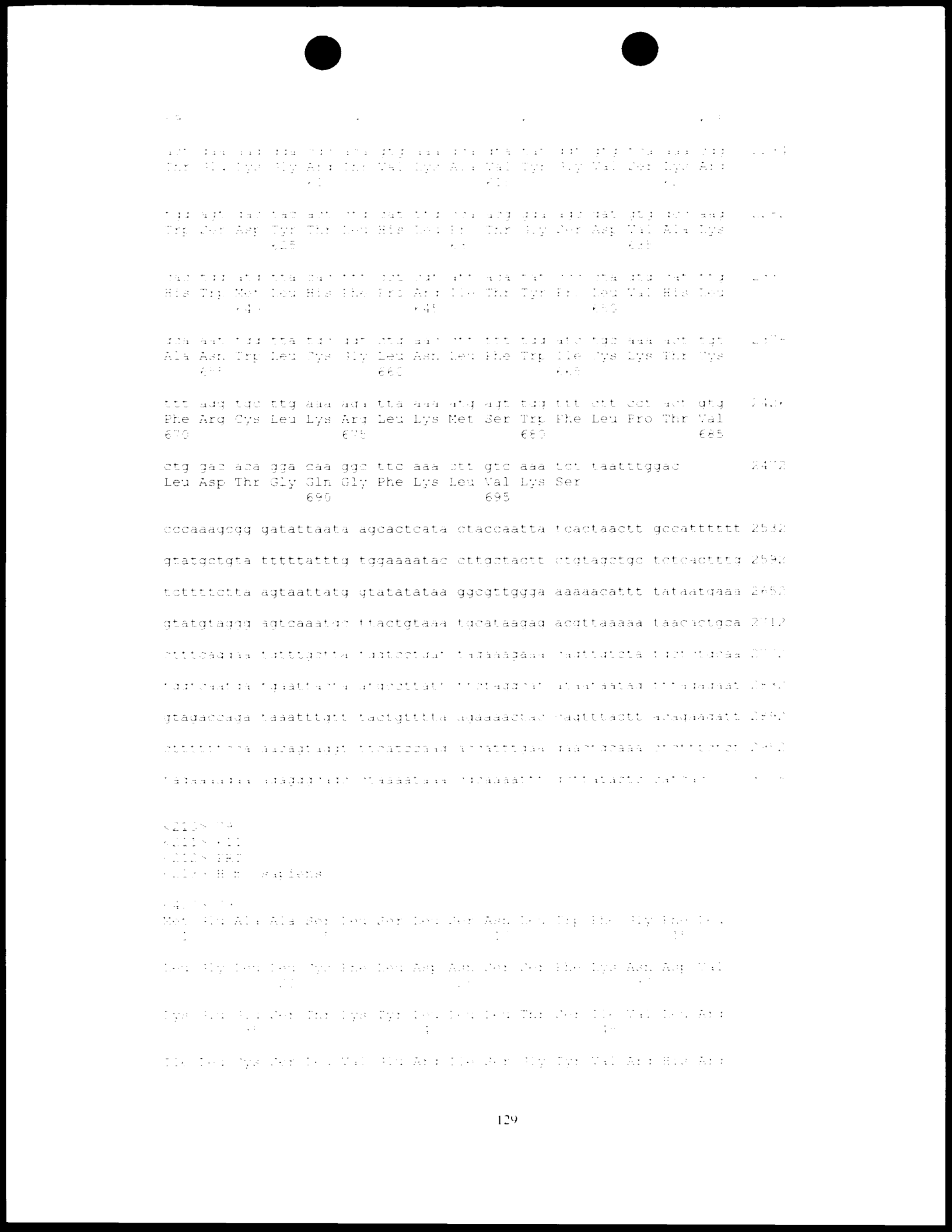
Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His Arg Thr Asn







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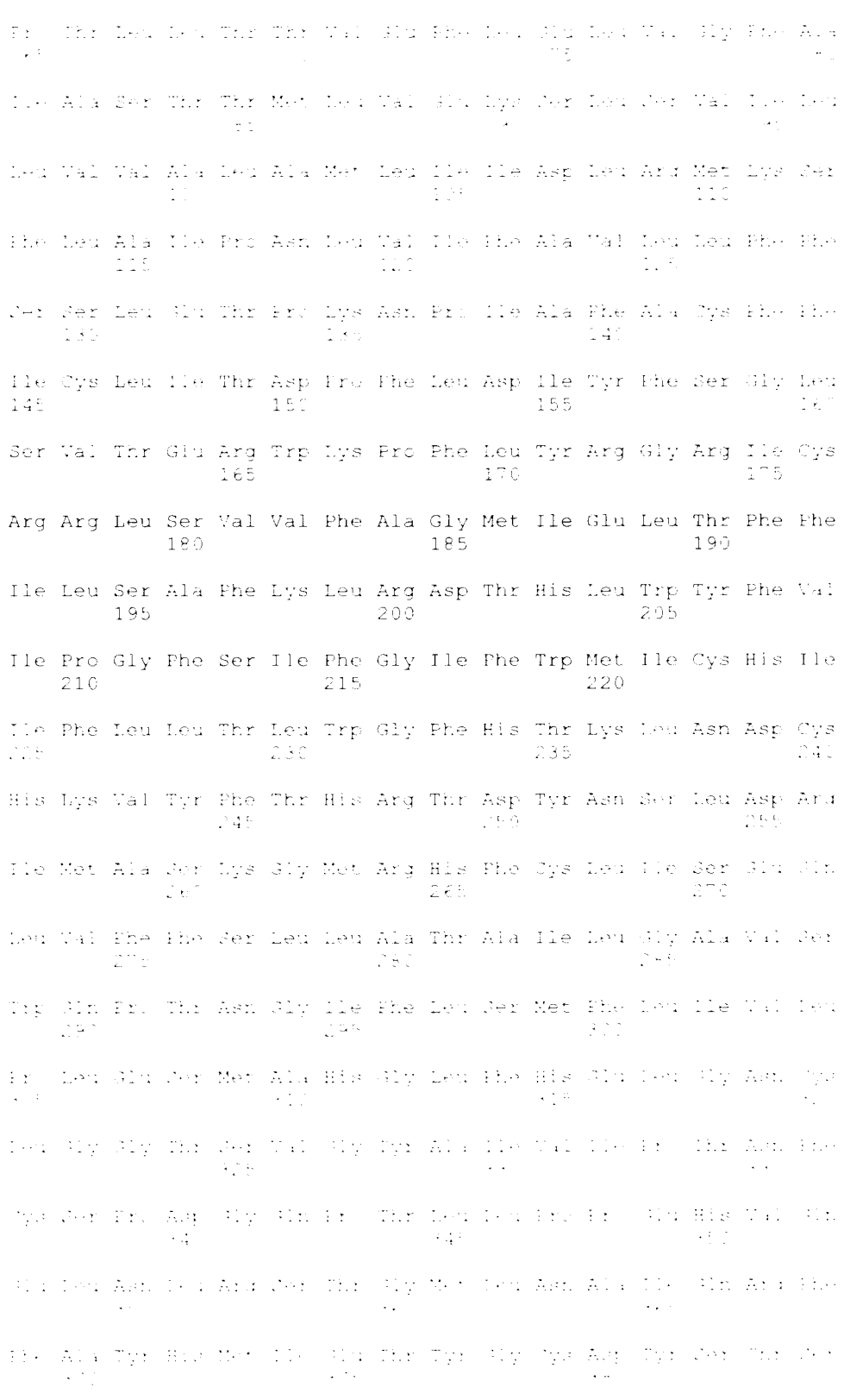

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Ser Asn Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp
10 15 20
aat tca tcc ttt aaa aat gat gta aaa gaa gaa tca acc aaa tat tta
Asn Ser Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu
25 30 35 40
ctt cta aca tcc ata gtc tta agg ata ttg tgc tct ctg gtg gaa aga
Leu Leu Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg
45 50 55
att tct gat tat gtg cat cat cgg ccc att tta ctg ccc aca ttt taa
Ile Ser Gly Tyr Val Arg His Arg Pro Ile Thr Leu Leu Thr Thr Val His
60 65 70
ttc ctg gaa ctt gtg ggt ttc gca ata gcc tct aca atg ctg gtg
Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val
75 80 85
aag aag tct tca gtg gt atc ttt ctg ctg gtg gtt gta gca ctt gca atg ctg
Glu Lys Ser Leu Ser Val Ile Leu Leu Leu Val Val Ala Leu Ala Met Leu
90 95 100
att att gat ctg aga atg gaa aag ttt ggg agt gca ctg gca ctg aac
Ile Ile Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Ile Asn Leu Val
105 110 115
att gtg gtg ata gtg ctg ctg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg
Ile Val Ala Val Leu Leu Val Val Val Val Val Val Val Val Val
120 125 130
ttg gat tat gtg aag aag cgg aag ttt ggg tat gtg gtg ctg ctg gtg gtg
Leu Asp Tyr Lys Lys Arg Lys Phe Gly Tyr Val Val Leu Leu Val Val
135 140 145
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150 155 160
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Leu Leu Val Val Val Val Val Val Val Val Val Val Val Val
165 170 175
ttg gat gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg gtg
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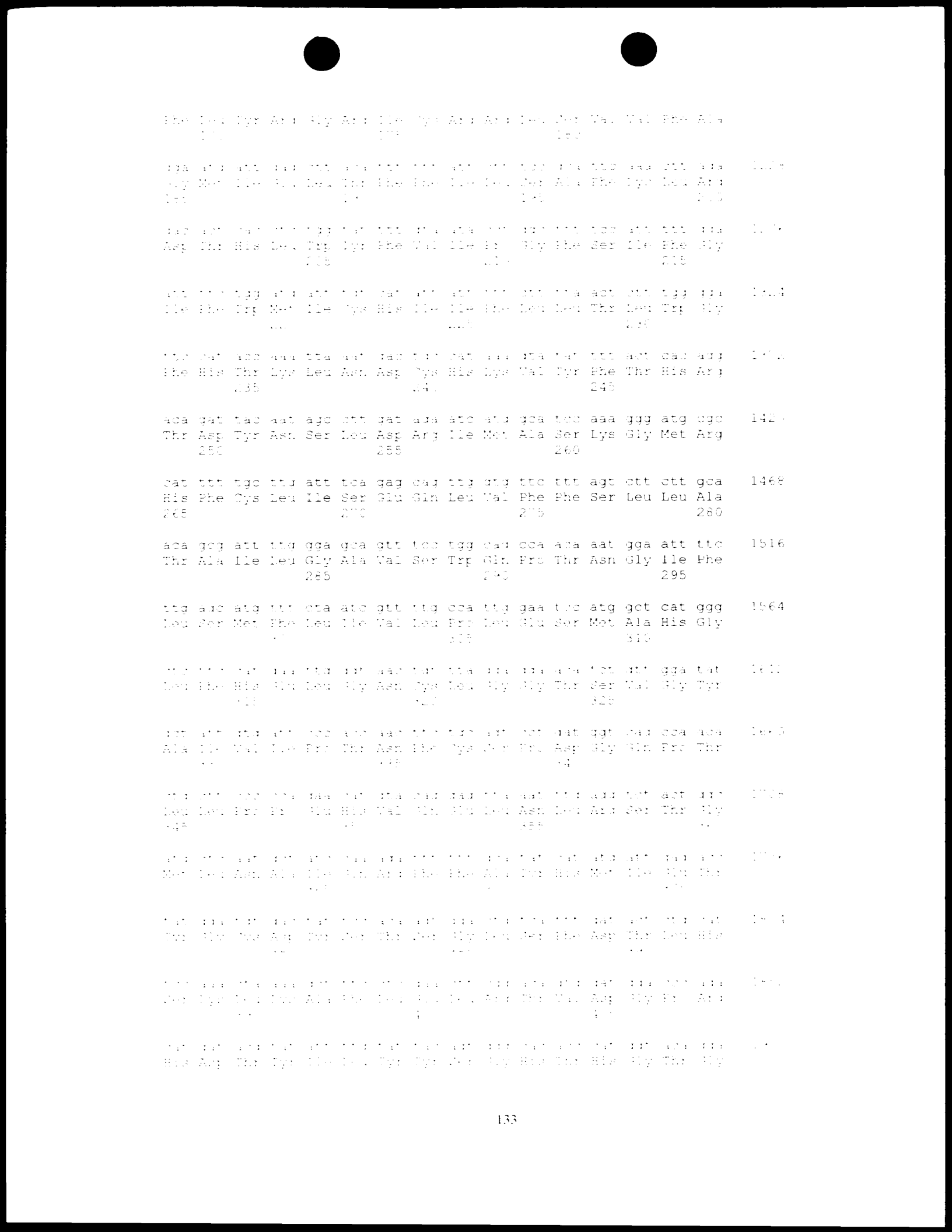
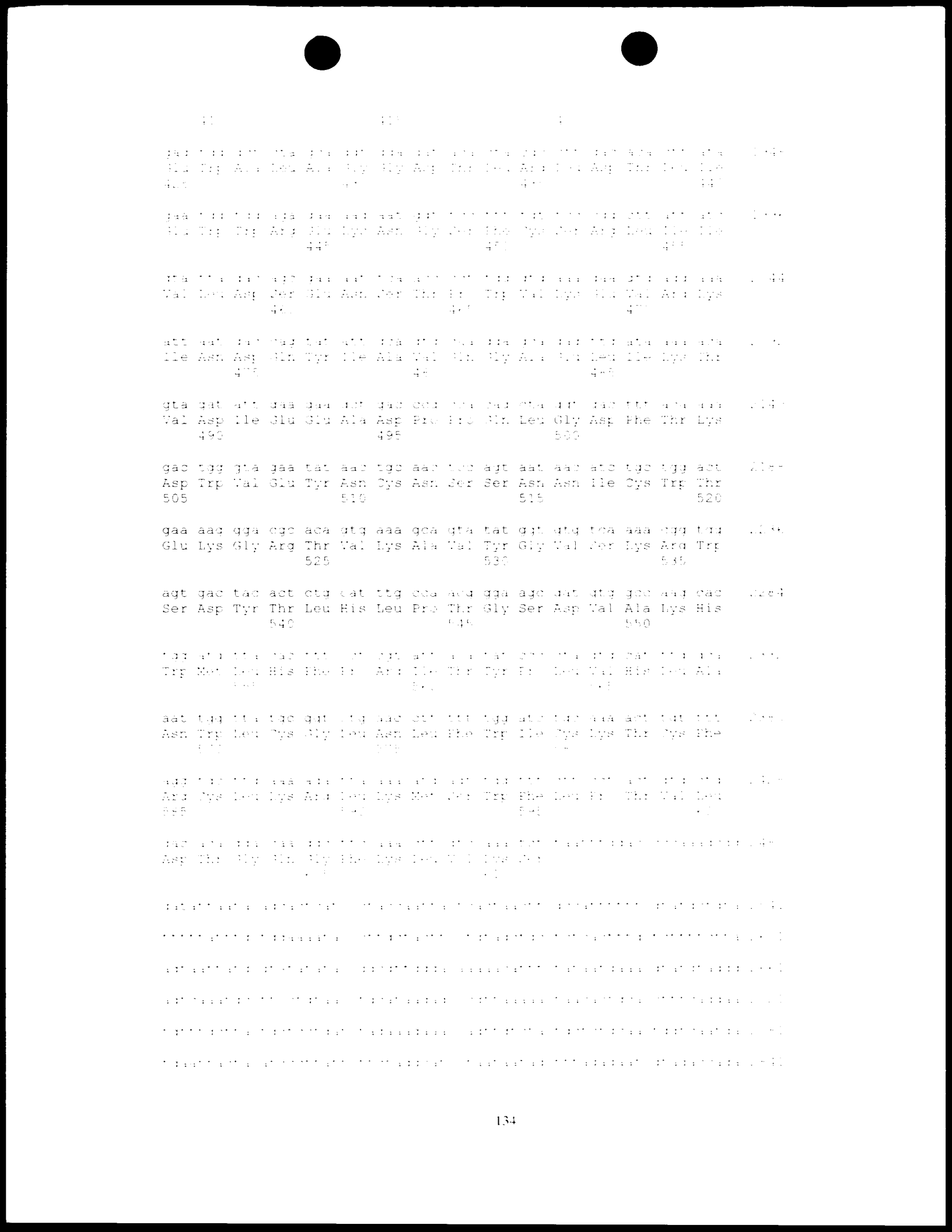
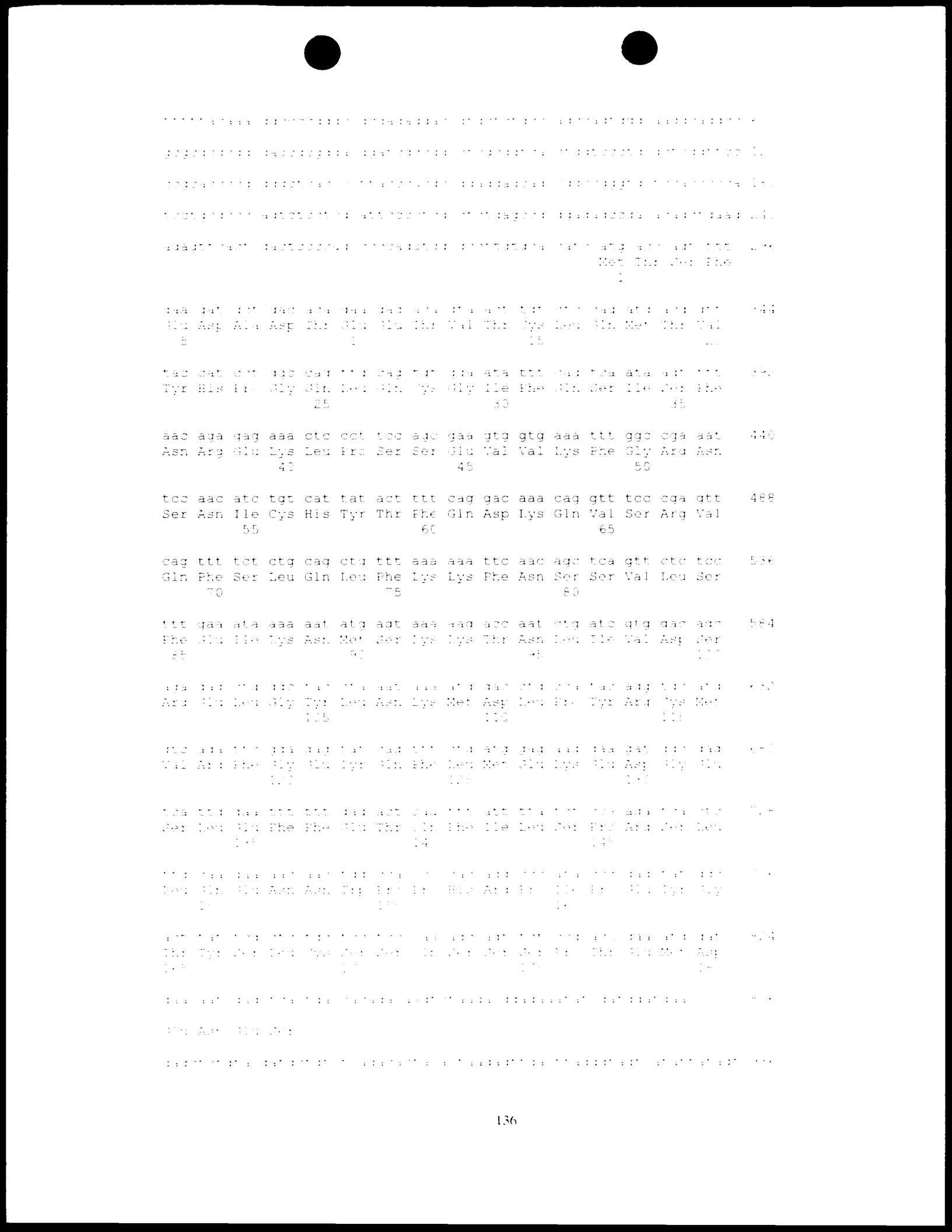
ttg







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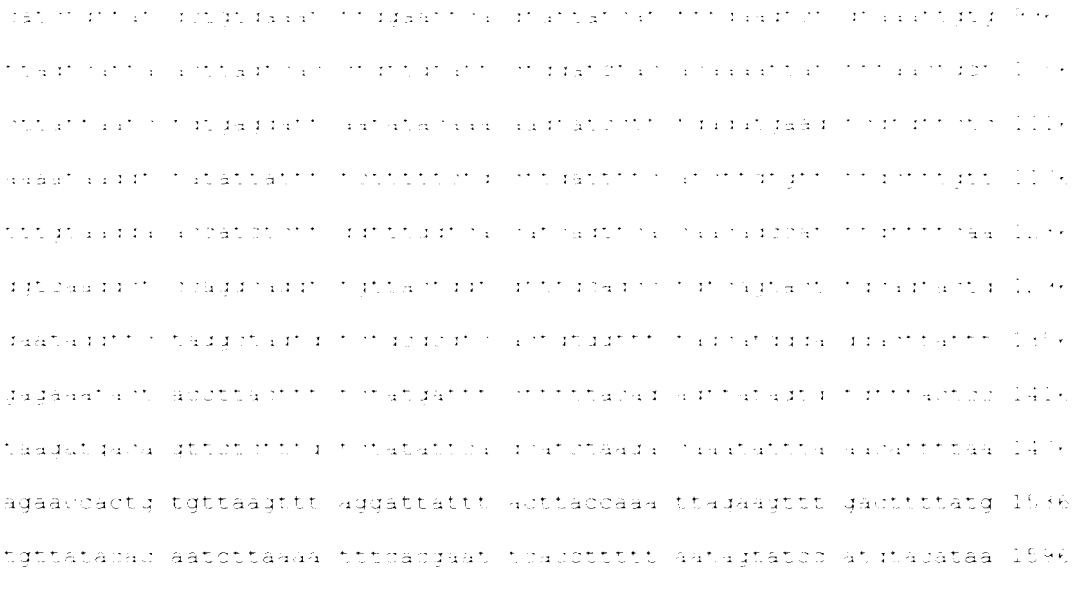

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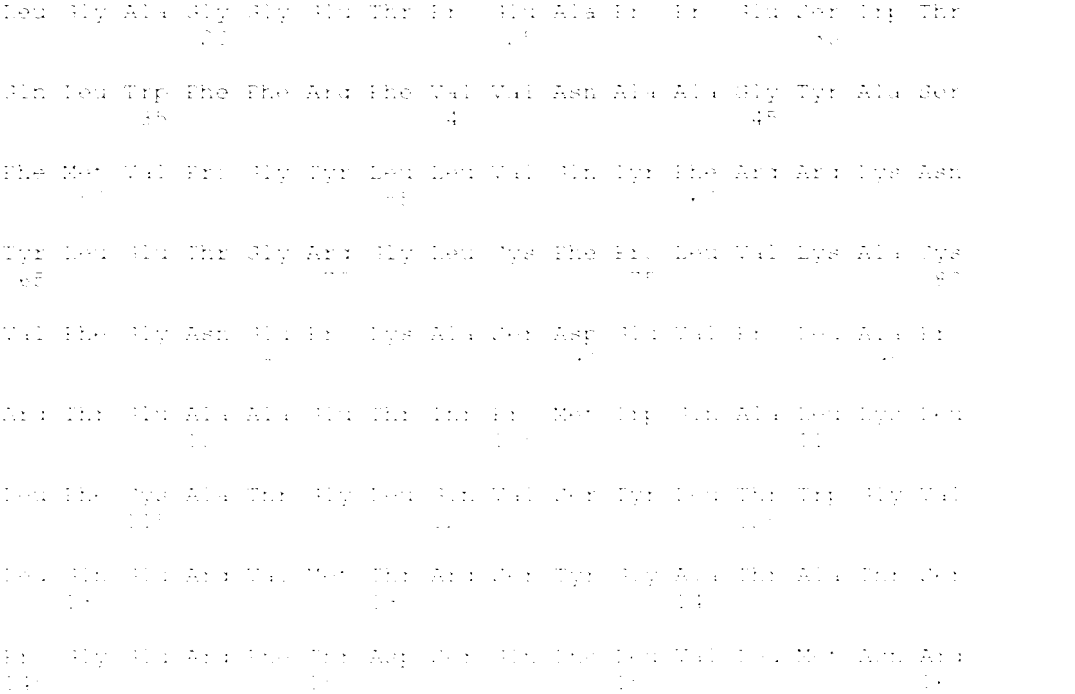

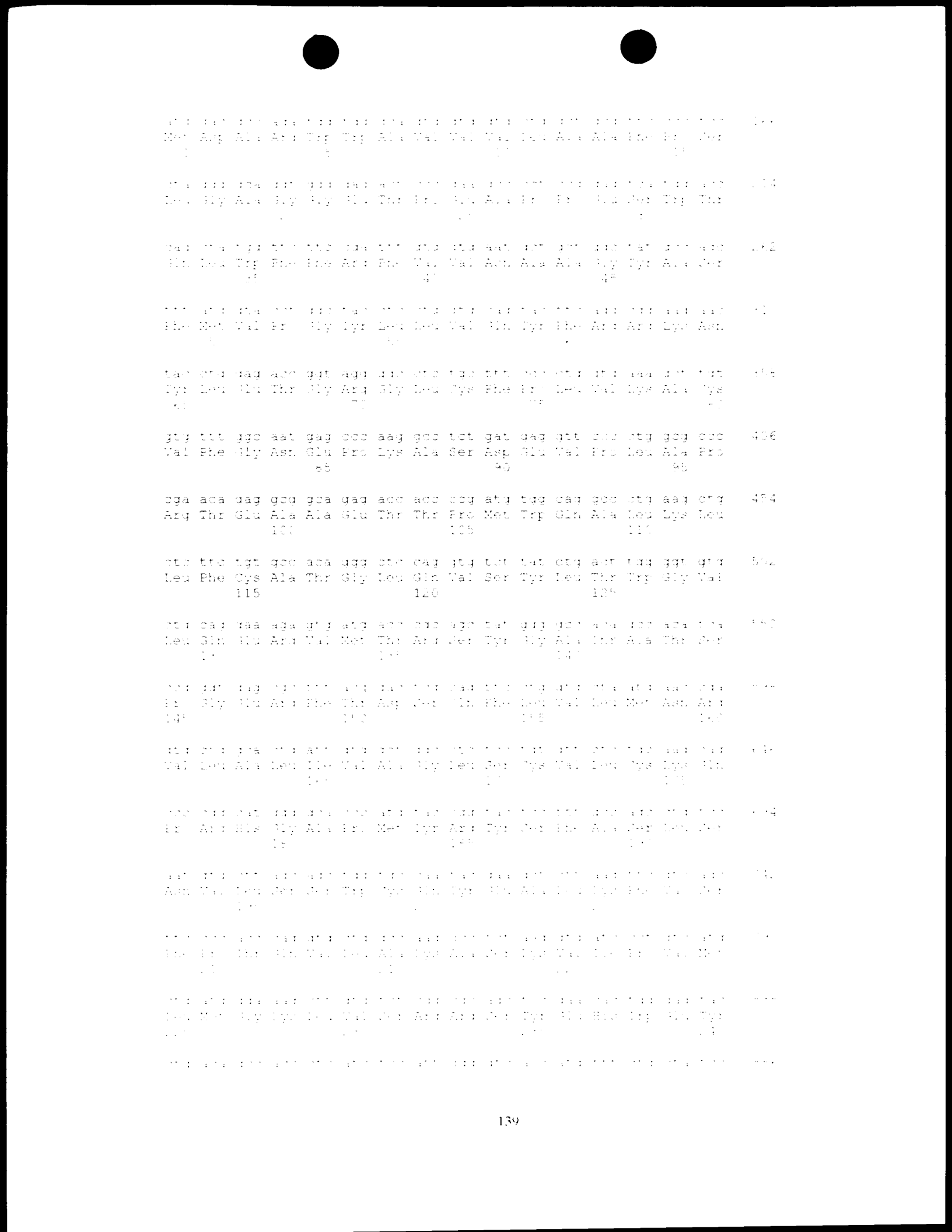

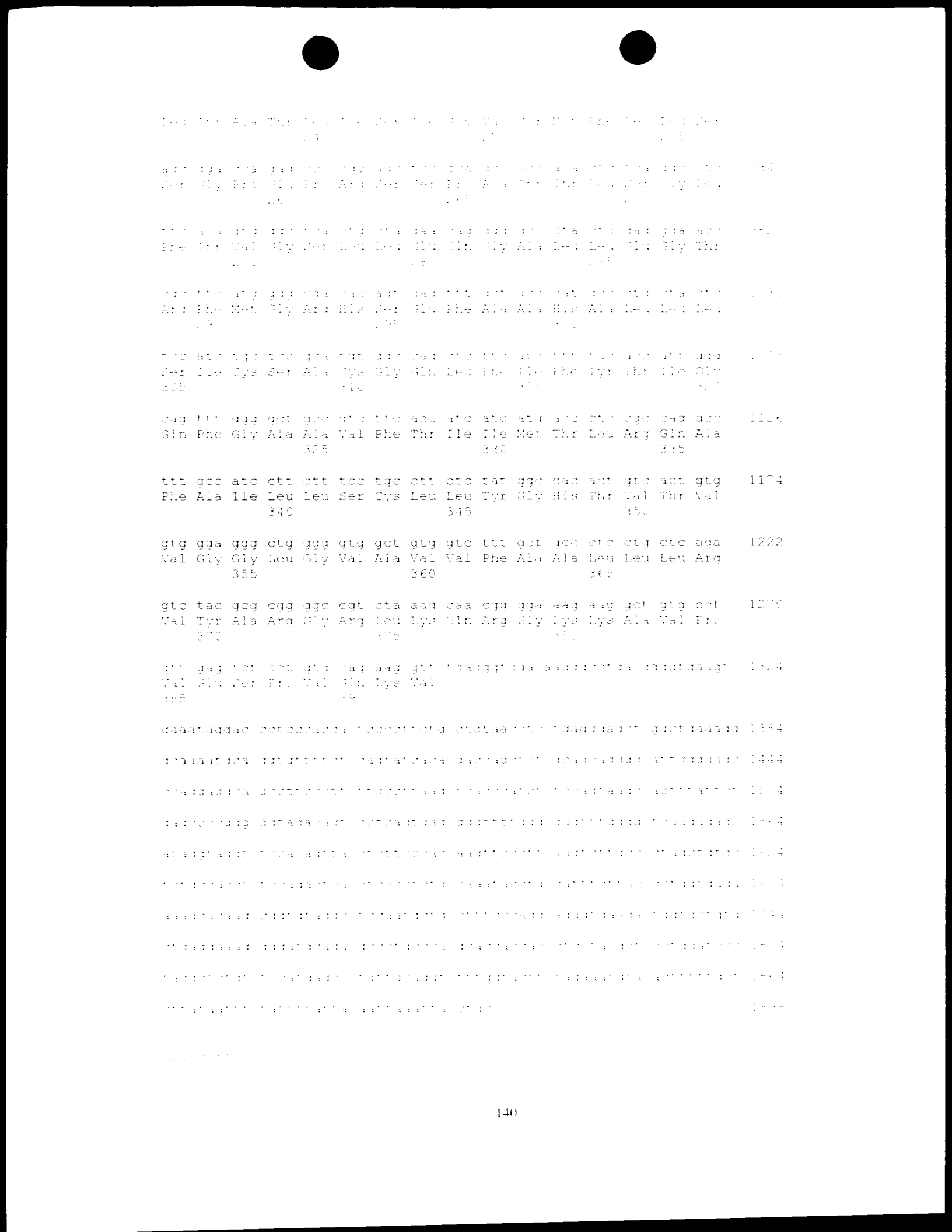

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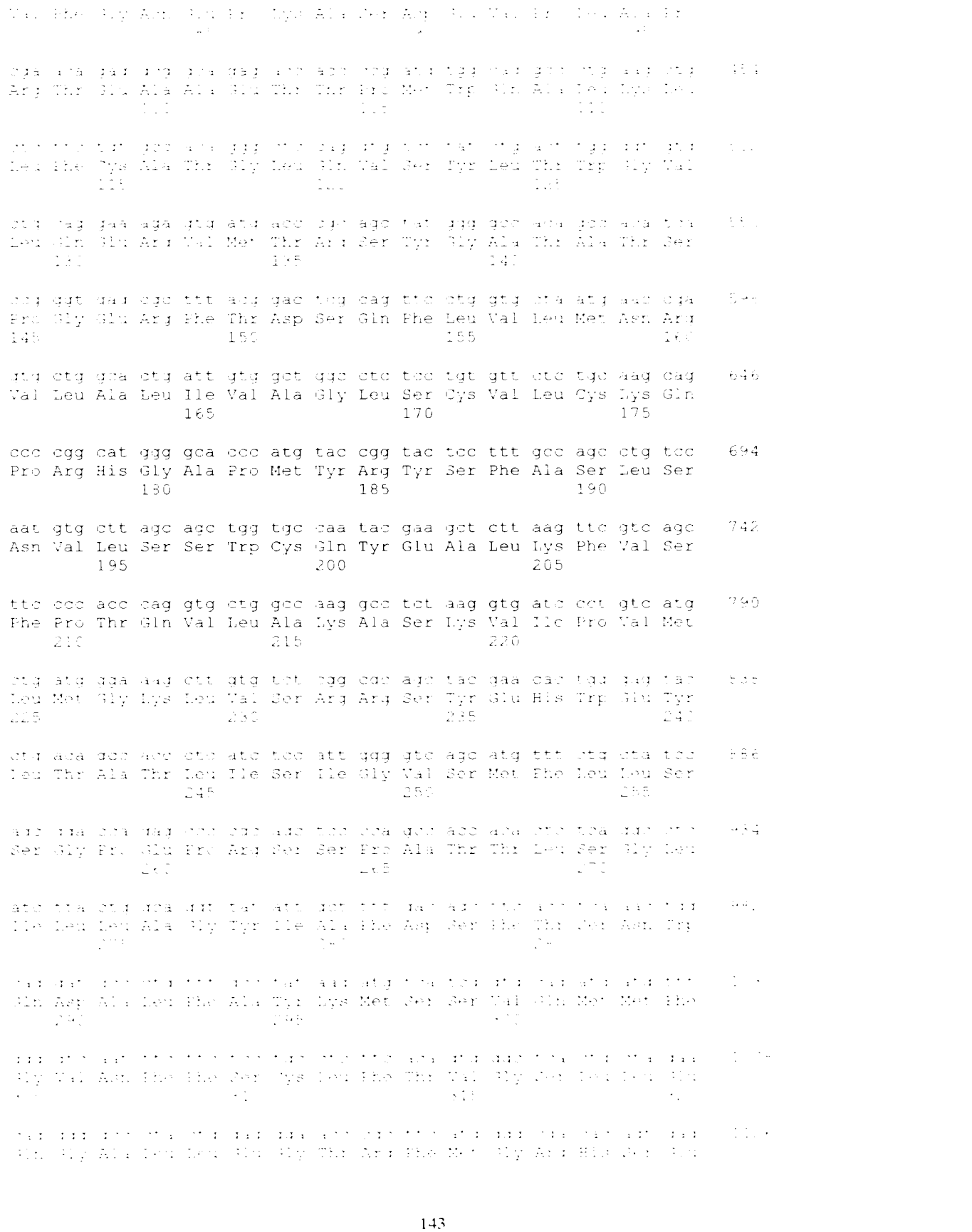

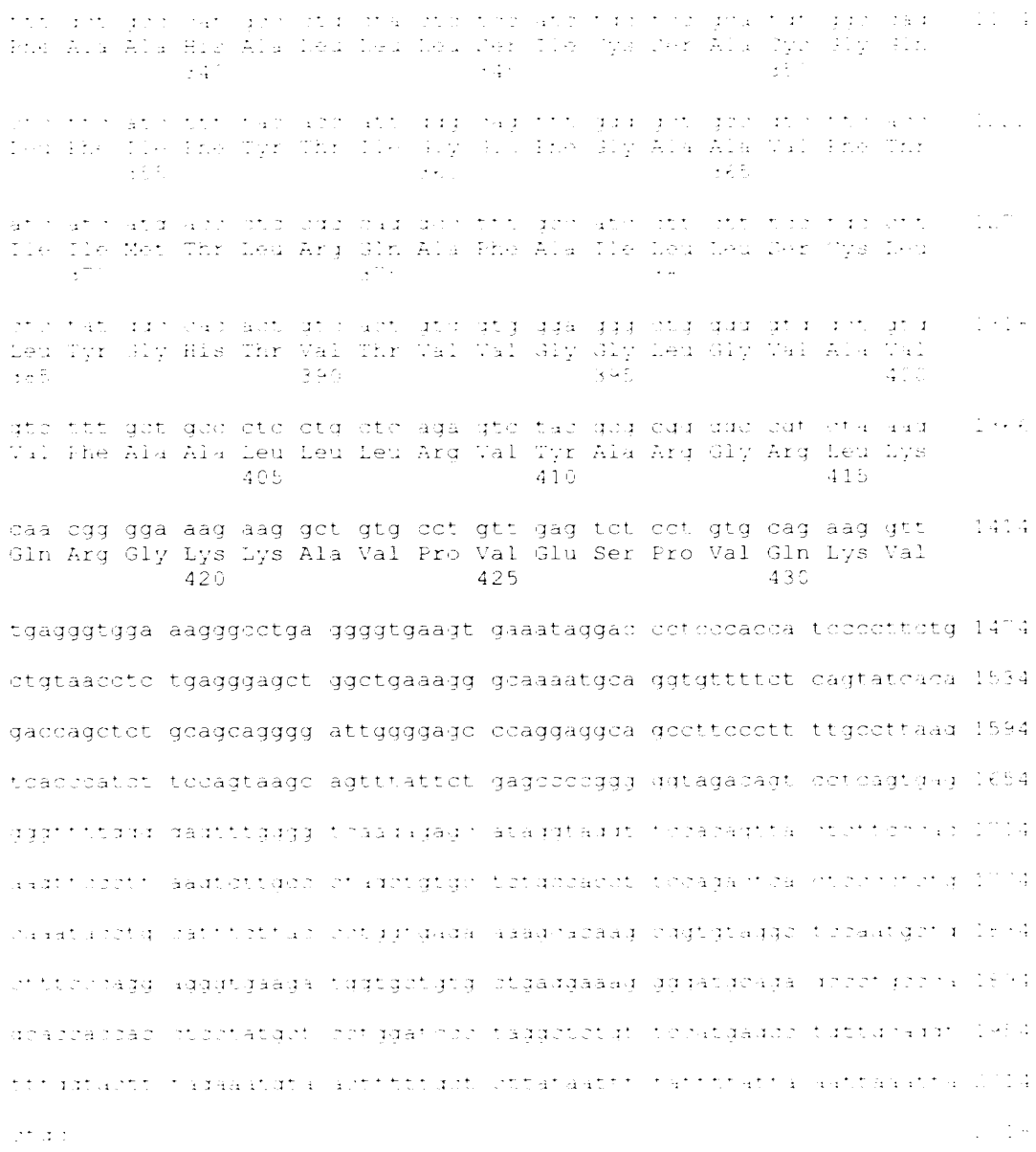

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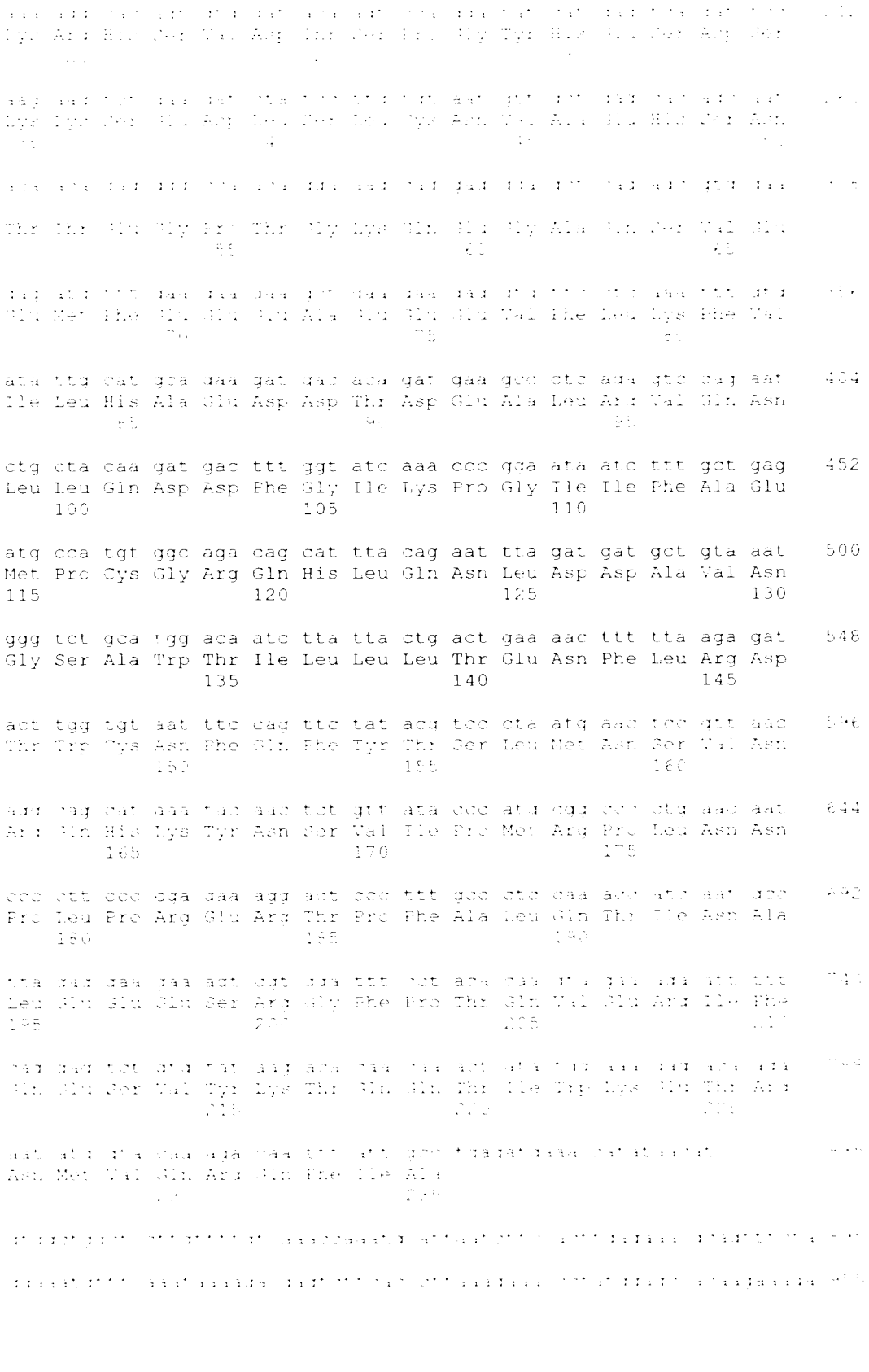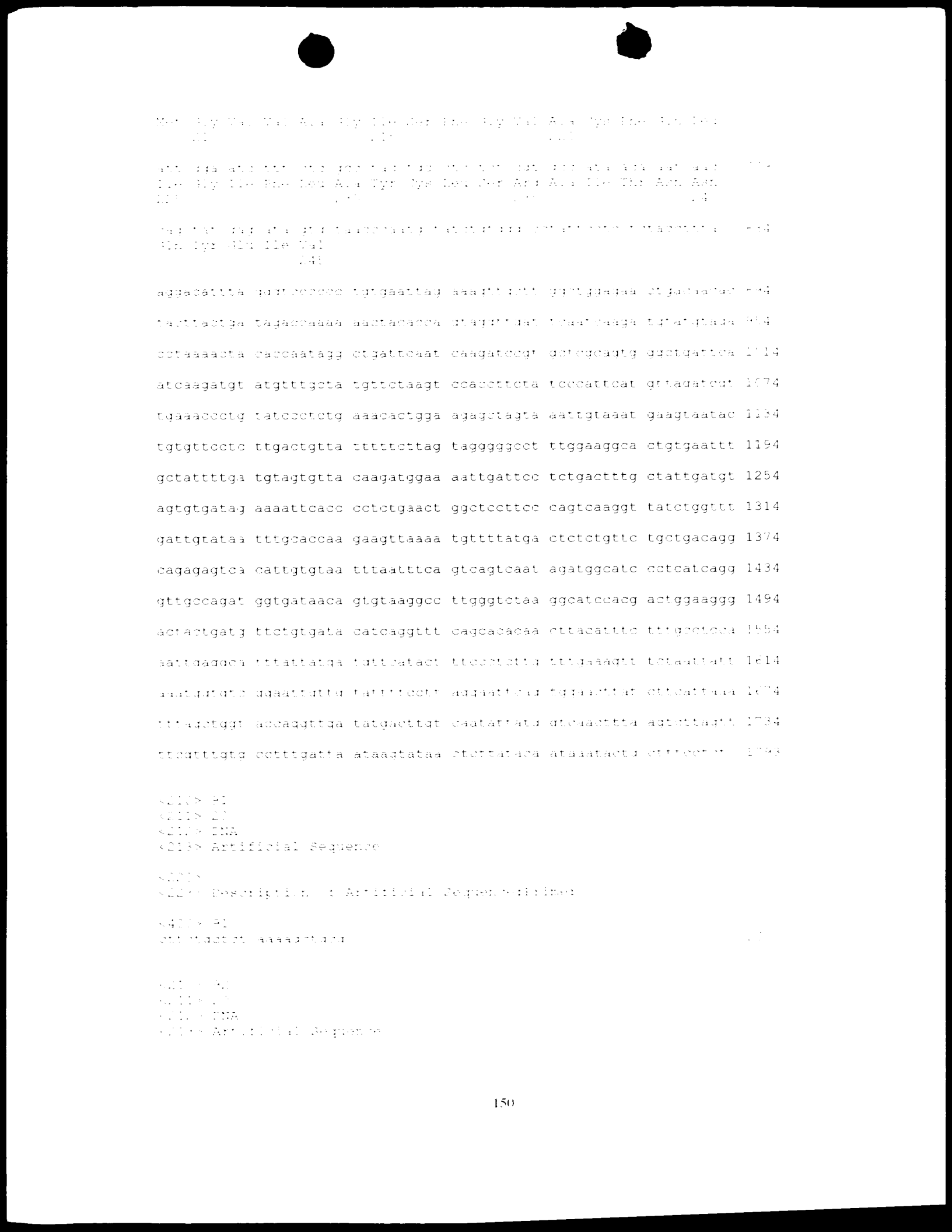
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